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THE RELATIONSHIP OF NEUROLOGY TO PREVENTIVE MEDICINE*

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NEW YORK

The neurologist is concerned with a branch of internal medicine which at first sight does not appear to have much relationship to public health, but, in reality, not only does such relationship exist, but it is a very intimate one. Though public health seems to concern itself with sanitation and pure food, epidemics and health-menacing noises, public hygiene is, in reality, public education. Its aim should be to teach people, not only how to live long, but how to live happily, and my first contention is that, until the present time, preventive medicine has concerned itself exclusively with the former, whereas, if the object and aim of life is the pursuit of happiness, personal and general, preventive medicine is but half accomplishing its purpose. Following its principles, we direct our efforts to stamping out diseases which kill, leaving unnoticed and unattacked those which maim and incapacitate. The victims of these often find life insupportable, and they not only menace the happiness of their families, but stain the escutcheon by the crime of self-destruction.

I shall attempt a discussion of the relationship of neurology to public health under two captions: first, our obvious duty in dealing with certain infectious diseases of the nervous system, and second, our privilege in attempting to overcome certain incapacitating mental states.

OUR DUTY

Certain infectious diseases of the nervous system, especially poliomyelitis and epidemic cerebrospinal meningitis should be considered reportable, quarantinable diseases. The former is not yet so considered by many health boards; the latter, fortunately, is. The epidemic prevalence of poliomyelitis has been recognized for nearly twenty-five years, the first epidemic having been studied in Norway in 1887, and the second in Vermont in 1894.[1] Since that time, more than fifty epidemics have been carefully described. As the result of the investigation of these epidemics, and particularly of the epidemic that occurred in southern Norway in 1905, the epidemic in New York in 1907, and the epidemic in York County, Nebraska in 1909, we are now in a position to state that the disease is communicable; that contact with a person sick of the disease is not necessary that another person may contract it; that the period of incubation is from four to ten days; that the contagiousness of the disease varies with the epidemic, and that the mortality rate is liable to great variation, in some instances being as low as 5 per cent., in others as high as 46 per cent. In addition, we know that the seasonal occurrence is very extraordinary; that it occurs practically only in the warm weather; and that unhygienic surroundings, density of population and conditions of health have little or no bearing on the occurrence of the disease.

The experience of Dr. G. P. Shidler[2] of York, Neb., shows that the disease can be readily controlled by quarantine, and boards of health should be urged to place poliomyelitis on the list of reportable diseases and to formulate measures which may be quickly enforced to constitute the strictest quarantine.

We must bear in mind that it is an acute and infectious disease of the cerebrospinal axis and its covering, the pia, with a pronounced and inexplicable predilection for the gray matter of the anterior portion of the spinal cord, which it nearly always succeeds in affecting before its pathogenic impetus is satisfied. It affects the gray matter in one case profoundly, in another triflingly, and the symptoms that result in any case must, of necessity, vary with the intensity of the infection and with the portion of the cerebrospinal axis that bears the brunt of the lesion. The most important factor in stamping out the disease is that we learn to recognize it early and that we interpret correctly the so-called atypical cases. In many of the epidemics the experience has been that milder cases and cases in which the paralysis was neither profound nor lasting were looked on as cases of grip or rheumatism. I need not say that these mild and difficult cases are as potent to disseminate the disease as are the severer cases.

The necessity for quarantining epidemic cerebrospinal meningitis is generally conceded. Here we are dealing with a disease that fights in the open, as it were. We know the natural history of the *Diplococcus intracellularis*, we know its mode of entrance into the system; and fortunately, thanks to the brilliant investigations of Flexner, we are in possession of a serum which, given early and properly, is adequate to control the disease, and, in any case, to rob it of its terrors. More than this, epidemic cerebrospinal meningitis is a disease that either kills its victim or allows him to recover, while poliomyelitis nearly always maims, and pitiably so, those that it does not kill.

Other varieties of infectious nervous diseases that come within the scope of the neurologist are epidemic polyneuritis and pellagra. The former is of such rare occurrence in this country, save in our tropical possessions, and the latter is now having its natural history

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Collins, Joseph: The Epidemiology of Poliomyelitis, THE JOURNAL A. M. A., June 11, 1910, p. 1925.

2. Shidler, G. P.: The Epidemic of Spinal Disease in Nebraska, THE JOURNAL A. M. A., Jan. 22, 1910, p. 277.

and pathology so carefully studied by those to whom the opportunity is given, that I shall make only this cursory reference to them here.

Preventive medicine has not given the attention that it should to certain diseases of the nervous system that flow out of occupation and especially of occupation in foundries, blast furnaces and rolling mills. There is a widespread or generalized intoxication of the nervous system that occurs in bronze workers. It is not possible in every instance to say whether the disease is a neuritis, a myelitis, or an encephalitis. A patient that I have had recently in the Neurological Institute will best illustrate this point and will, likewise, indicate how necessary it is to apprise workers in such foundries of the dangers to which they are exposed.

A man, 47 years old, who had lived a continent, healthy life, and who was by occupation a foreman in a bronze factory, was sent to me from Bellows Falls with the diagnosis of pernicious anemia. His story was that in the winter of 1909 he had had two or three attacks of dysentery without attributable cause. Careful inquiry revealed that during the previous summer he had an attack of salivation, that his mouth had been sore, that his breath was extremely offensive, smelling of garlic, and that he had a craving for raw onions, an article of food which he had not been accustomed to eat. In July 1909, and some time after the third attack of dysentery, he noticed that he would often be stricken with uncontrollable drowsiness, while talking to his men in the shop, while sitting at table, while in church, etc. In addition to this, he became forgetful and stupid. About two months later, he first noticed a sensation of numbness and weakness in the extremities, phenomena that increased until he was wholly paralyzed. It was also noted that his speech became somewhat indistinct, and on two occasions he was incontinent of urine. After three months this paralysis began to disappear gradually, and when I saw the patient in March, 1910, he was able to walk with the aid of a cane and supported by another person. The examination showed that there was no marked muscular atrophy. The station and gait and the purposeful movements of the hands were all ataxic. The knee-jerks, the ankle-jerks and the elbow-jerks were lively and the patient had the Babinski phenomenon (extension of the big toes on irritation of the soles) on both sides. There was no detectable disturbance of the various forms of sensibility nor were the special senses disordered. The pupils responded readily to light. Examination of the urine failed to reveal either arsenic or lead.

I interpret this case as an example of intoxication of the nervous system, the peripheral as well as the central, probably by arsenic, although it is quite possible that it was the result of more than one metallic poison. The odor of garlic that was attached to the breath, the ptyalism, and the attacks of dysentery, might all be accounted for by arsenic, but arsenical poisoning has rarely been followed by symptoms indicative of implication of the spinal cord and brain such as existed in this case.

The point that I particularly wish to make, however, is that workers in factories such as this should have their health safeguarded.

There is a form of neuromuscular affection which occurs in workers exposed to high degrees of dry heat, such as stokers, puddlers, etc. Its most conspicuous system is what we neurologists call myokymia associated with generalized weakness. This condition has been studied by Edsall of Philadelphia, and I myself have encountered several instances of it. What its pathogenesis is, whether an intoxication by products developed within the system as the result of application of intense heat, or whether it is due directly to the heat, cannot as yet be said.

I purposely refrain from any discussion of the relationship of syphilis to diseases of the nervous system and to the bearing of this problem on preventive medicine. Everyone knows that there are certain organic diseases of the nervous system that flow out of syphilis, and that, if syphilis were conquered, tabes and its twin, general paresis, syphilitic spinal paralysis, and syphilitic endarteritis and meningitis would cease to exist. Syphilis is a social evil which must be dealt with in some other way than by science. The dominant instinct of man will be appeased illicitly, so long as the race exists and so long as alcohol is used. Education will do something toward diminishing its frequency, but a small amount of alcohol, taken at one time, quickly inhibits the effect of education. My personal belief is that we must check the ravages of syphilis by an adequate cure properly administered.

OUR PRIVILEGE

An incalculable part of all the misery, suffering and incapacity in the world is contributed by those functional nervous diseases that are now commonly called the psychoneuroses. They are the diseases that furnish the pabulum on which the rank growth of supernaturalism in therapy, in the shape of Eddyism and Emmanuelism in this country, has occurred. They are the diseases on which the quack fattens; they are the diseases whose existence is a constant reminder of our inadequacy to give proof of the reason for our existence, namely to heal the sick.

We do not successfully combat psychoneuroses, hysteria, psychasthenia, obsessive and anxiety states, because we do not prevent them. We do not prevent them because we do not know their cause. We know that they occur in individuals of neuropathic and psychopathic heritage, that is, in those whose ancestral endowment to resist strain and stress is below the normal, and we know that they are immediately conditioned, in persons thus predisposed, by normal and physical trauma.

During the past few years, a theory or hypothesis of the causation of the psychoneuroses has been evolved and put forth by Freud of Vienna, which is deserving of the most careful investigation and consideration. Although it does not, at first sight, seem to concern the physician who devotes himself to preventive medicine, in reality it does, for on him will devolve the devising of ways and means to prevent them.

The enormous importance of sexual factors in pathologic states as well as in normal conditions, has always been conceded, at least tacitly. It is Freud's merit to have opened up a wider vista into the delicate and hidden connections between the erotic element and nervous disease. His explanation of functional neuroses as the result of a mass of suppressed sexual desires has fallen like a bombshell into this era of sexual hypocrisy; and his ruthless application of the so-called sexual symbolism in all cases has naturally led to a strong, though by no means universal, reaction against the proposed remedy, psycho-analysis.

The question has been raised: Why should the sexual emotions alone, among the manifold equipment of the psyche, give rise to disturbances? In other words, why

regard the sexual emotion as the root of all other emotions? In answer it may be urged that there is only one thing in life which is desirable and pleasing enough in itself to induce human beings to sacrifice all else for it, and for which such sacrifices are constantly being made, namely, love, and its sexual gratification. The suppression of sexual life by sexual ethics is a deplorable concomitant of culture. In the interest of the public the individual is forced to immolate a part of his personality, especially his sexual instincts, and, among these, more particularly the heterosexual desire.

Under favorable circumstances, which include elements ranging from a trained will-power to sedative surroundings, the sexual instinct may be sublimed, that is, directed towards a spiritual instead of a carnal goal. It is then devoted to the amelioration, rather than the propagation of the species. Sublimation processes are the basis of artistic and scientific activities, and in more than a few cases, an unflagging diligence along a chosen line of work is the result of a transformed unsatisfied sexual desire. The sublimated sexuality finds its highest expression in adaption to circumstances, the harnessing of the plunging horses of instinct to the chariot of reason. But it is only the direction of the desires that is changed, not their strength; and unless a certain measure of direct sexual activation be left, the sublimation will lead to disease.

Psychoneuroses are the price of sublimation, the negative of the perversions, according to the teachings of Freud. The self-indulgent, who compromise between desires and gratification, are often blessed with iron "nerves," whereas the would-be ethereal and sexless are proverbially high-strung and nervous. The hysteric, beyond the boundary line of psychic equilibrium, cling so tenaciously to the desire as to renounce peace and happiness, preferring silence to confession. They exhibit an exaggerated tendency to sublimation, but their symptoms are abnormal sex manifestations.

Other psychoneurotic states, which, in the opinion of Freud, are mainly due to sexual abstinence, or rather, suppression, with or without masturbation, are the phobias and obsessions. The pathologic condition is, again, the outcome of the disproportion between the sexual demands and the sexual suppression.

A sexual etiology is common to all neuroses, and, in the psychoneuroses proper, dates back to childhood (Freud's infantile sexual traumatism). Such psychoneurotic states, on the basis of psychic traumatism, besides the phobias and obsessions, include neurasthenic fears with their sequelæ, disturbances of sleep, such as nightmare, and of speech such as stammering; nervous affections of the heart, the sexual heart, phrenocardia; hypochondriacal conditions; a number of sexual perversions, fetichism, sadism, masochism, psychic impotence, homosexualism and vaginismus. In his modified views, Freud holds that the factors of constitution and heredity regain their supremacy in proportion as the accidental experiences of sexual adventure recede into the background. Nevertheless, the customary term "neuropathic disposition," according to him, really means "sexual constitution" of the individual. The undeniable fact that sexual traumatism also plays a part in the life history of individuals who are apparently free from neurotic taint is ingeniously explained as the correct balance of the sexual equation.

In his later teachings Freud admits that the accidental effect of a psycho-traumatic experience on the infantile sexuality is not so far-reaching or relevant in its bearing on the origin of a psychoneurosis as is the individual reaction of the sexual constitution. His original view that a morbid fear is a sexual desire diverted from its natural course has been extended by the acceptance of other possible causative factors, namely a congenital diathesis expressed by psychic inadequacy for the control of the somatic sexual tension. The onset of a neurosis is governed by the original resistance of the nervous system, and facilitated by the ordinary emotional shocks of the individual's life, such as fright, grief, psychic fatigue; but the specific cause, the factor which determines the form of the neurosis, is sexual in character.

Hysteria, according to Freud's interpretation, is the result of the conflict between the sexual desire and the sexual suppression. The hysterical symptoms have the value of compromises between these two psychic currents. The sexual desire is confronted with internal resistance, notably modesty and physical aversion. Sexual abstainers (teetotalers in the *ars amandi*) accumulate a mass of unassimilated memories, suppressed reminiscenses and converted emotions. In the course of time, the original feelings are blurred, and finally vanish from the realm of consciousness, to become replaced by the familiar hysterical symptoms of globus, palsies, fits, etc. Provided the source of the disturbance can be reached, the suppressed emotion will find its natural solution, and the symptoms will disappear. Having a sexual etiology, hysteria is never associated with so-called innocence of thought, and hence the danger of corruption does not exist. Being of psychogenic origin, the disease requires fundamentally psychic measures for its control. The symptoms must be literally reasoned away.

I trust that I have said enough to convince everyone that the relationship between neurology and preventive medicine is a close one, and that the neurologist of the future must be one who works diligently in the field of preventive medicine. I venture to express the opinion that the expert in preventive medicine would profit from some training in neurology.

But the subject that I venture to bring to attention in the second part of my address, namely that of the psychoneuroses, is one that must be dealt with entirely from the pedagogic standpoint. We, as physicians, however, must devise ways and means for giving such instruction. It certainly cannot be given, and should not be given by the teachers in our schools. I regret to say that the vast majority of them that I have encountered have an ignorance of the principles of sex knowledge and sex hygiene that is almost abysmal. In fact, I am not at all sure that we physicians, as a class, take the trouble to acquaint ourselves as intimately with the principles of sex physiology as we should, and, of course, we cannot expect to teach that which we do not know, and we should not permit ourselves to get a knowledge of it while teaching, because the experiment is too dangerous to those with whom we are dealing. It seems to me that plain wholesome lectures on sex physiology given to small classes and in many instances individually, should be a part of the curriculum of every public and private school, and that these lectures should be given by physicians, men and women, whose sanity, honesty, earnestness, and ability have been testified to or vouched for by their appointments from the executive medical officer of boards of health.

37 West Fifty-fourth Street.

PAPILLARY CYSTADENOMA OF THE KIDNEY, ASSOCIATED WITH MYOMA OF THE UTERUS AND SPINAL CARIES *

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Summary.—The patient presented an unusual series of lesions, namely, uterine myoma with hemorrhage, spinal caries and kyphosis, together with a large bleeding tumor of the kidney. Hysterectomy was first done for the myoma. The kidney hemorrhage filled the bladder with firm clots which decomposed; a vesicovaginal incision gave exit to the offensive clots and averted infection of the kidney growth. The latter was removed by nephrectomy and later under local anesthesia the vesicovaginal fistula was closed. The patient recovered.

Fig. 1.—A papillomatous pedicle springing from modified kidney structure (× 100).

Fig. 2.—A loosely spread portion of a papillary growth (× 100).

History.—M. J., aged 27, married, sterile, was an overtall thin mulatto woman. On admission to the Presbyterian Hospital she was able to give little history except that of irregular hemorrhage from the vagina for a year, at times severe. The day before admission the urine was bloody also, but she had not clearly distinguished the uterine from the urinary bleeding in the past. For two months she had noticed a tumor in the left upper abdomen. There had been a little pain for a month in the left lumbar region, over the left iliac crest and in the left thigh and the legs. There were well-marked syphilitic scars about the anus and legs. The urine was negative except for abundant blood. As the hemoglobin was 28 per cent. and she was losing blood freely from the uterine tumor, abdominal hysterectomy was done as a first step. An interstitial uterine growth reached nearly to the navel, which the pathologic laboratory reported as a myoma of the uterus with no unusual features.

Recovery from the hysterectomy was aseptic, but about two weeks afterward the hemorrhage from the tumor of the left kidney, which had been absent since admission, began again and soon became serious. The bladder filled with firm clots, which became infected and highly offensive. The cystoscope showed blood coming from the left ureter, and, while it might have been possible to break up and remove clots with an evacuator, the process was not without danger and would probably have to be repeated. With the large mass present involving the lumbar spine as well as apparently the left kidney, not the slightest chance of infection through the bladder could be taken. Therefore a large vesicovaginal opening was made, attaching together the mucous membrane of the bladder and vagina. Removal of the clots and irrigation through this fistula promptly cleared up the bladder infection and maintained a clean field while the kidney was attended to.

Fig. 3.—Shows cyst wall and areas of hemorrhage (× 100).

Examination of Tumor.—What appeared to be a kidney tumor reached 2 inches below the navel on the left side, filled the whole left upper quadrant and was lost under the ribs, which were forced outward and forward. The enlargement produced by the tumor continued around behind where it joined another swelling to the left of the three upper lumbar vertebræ. These projected backward out of line. The swelling immediately to the left of the diseased vertebræ was deep-seated between the ribs and the spine. There was tenderness, but no definite fluctuation and no redness of the skin. The

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

questions for decision were whether the abdominal tumor was directly continuous with the tumor of the spinal column; or whether the spinal disease was a caries and separate from the other tumor, while lying in contact with it; and, as the masses could not be separated by examination, whether an attempted nephrectomy would open up the spinal area or not. A well-marked bruit and thrill behind suggested an aneurism eroding the vertebræ, but it was found that these symptoms appeared only when the patient lay on the right side. Indeed, the kidney tumor proved to be suspended from its upper portion with some range of mobility below, so that with change of the patient's position it would swing against the aorta, giving rise to the bruit. The skin test of von Pirquet for tuberculosis was negative. The *x*-ray photograph showed necrosis and posterior displacement of the three upper lumbar vertebræ, apparently from intrinsic disease and not from erosion. Aspiration to a depth of 2 inches in the swelling to the left of the spine yielded dark, thin, bloody fluid. On this the report of the pathologic laboratory by Dr. Canby Robinson was sterile blood with excess of serum. Cultures and smears were negative for tubercle bacilli and other organisms. In the determination of the sufficiency of the other kidney, indigocarmin solution was injected into the buttock muscles by Dr. Laws. The cystoscope then showed active spouting of blued urine from the right ureter in eighteen minutes, while the blue stain appeared much more slowly on the diseased side, and the spurts were very feeble and infrequent. The blue stain was very faint on the left. This proved the relatively greater activity of excretion on the sound or right side, and as there were no casts, while the total twenty-four-hour quantity was good, nephrectomy appeared safe. Dr. Willard concurred in the opinion that the main mass was a renal tumor, probably separate from the tender swelling near the spine and that this was secondary to spinal caries. Operation proved the correctness of this view.

Fig. 4.—A small cyst and papillary growth inside (× 100).

Operation.—Through an incision 8 inches long forward over the tumor from the edge of the quadratus lumborum, the entire tumor was enucleated and proved to be a greatly enlarged left kidney. There was no evidence of infiltration of surrounding tissues. Owing to the inaccessibility of the stump, two curved hemostatic forceps were left attached to it, no ligatures being applied.

Postoperative History.—At the end of forty-eight hours these were unfastened, one being removed entirely on the third day and the other, which had appeared to be adherent, on the fourth day. There was no hemorrhage, and aseptic healing followed. Eighteen days after the nephrectomy, the vesicovaginal fistula was successfully closed with no pain under local anesthesia. Two per cent. eucain solution and 1 to 20,000 adrenalin solution were injected into the tissues of the vesicovaginal septum.

When studying the kidney functions prior to nephrectomy in this patient, the presence of the vesicovaginal fistula prevented the distention of the bladder with water or air to facilitate cystoscopy. As reported to the Philadelphia Academy of Surgery[1] I overcame the difficulty by introducing a finger-cot partly through the fistula and then distending the cot with water. This tightly closed the fistula for the time and made cystoscopy easy. Four weeks after the nephrectomy, when the patient, wearing a plaster jacket for the spinal caries, was nearly ready for discharge from the hospital she

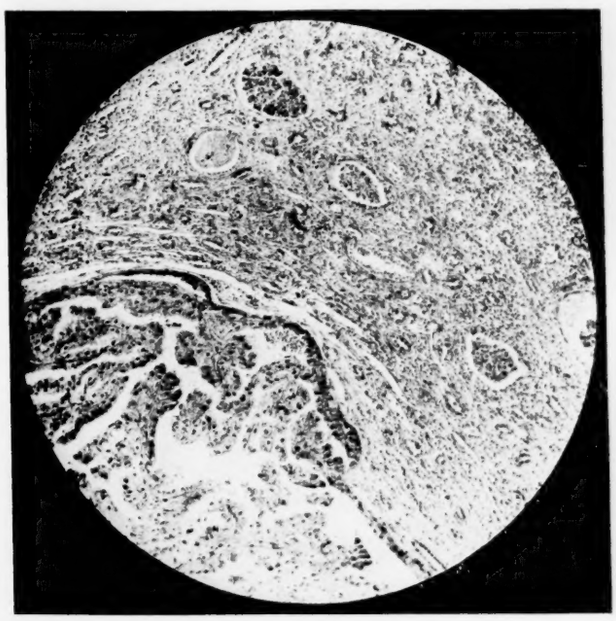

Fig. 5.—A portion of a cyst, and a portion of modified kidney cortex which contains Malpighian bodies and numerous tubules cut in various directions (× 100).

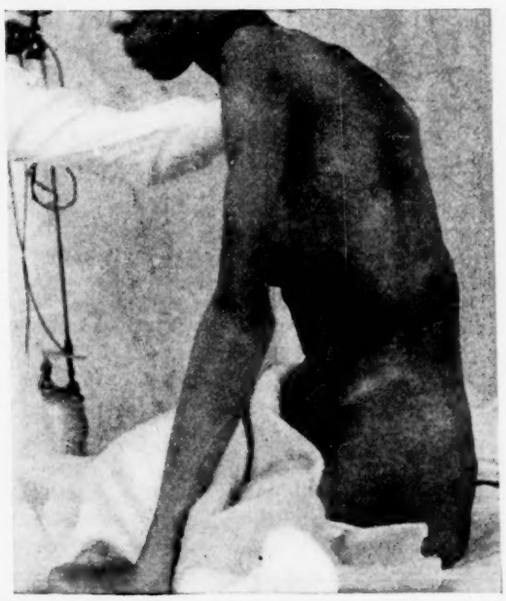

Fig. 6.—After hysterectomy and nephrectomy; spinal deformity from caries of three upper lumbar vertebræ.

1. Shoemaker, G. E.: Ann. Surg., December, 1909.

suddenly developed a motor paralysis of both lower extremities without impairment of sensation. She had previously been moving freely about the bed. This impairment increased rapidly for seven days after which some improvement in motion occurred. The patient became unwilling to wear a plaster jacket and was discharged at her own request forty days after the nephrectomy.[2]

Microscopic Examination of Tumor.—Dr. G. Canby Robinson, the pathologist of the Presbyterian Hospital, kindly contributes the following description of the microscopic appearances of the renal tumor: "The tumor mass, which measures 18 by 12 by 9 c.m., takes roughly the shape of an irregularly enlarged kidney. It is roughened by slightly bulbous swellings, especially at the lower end. These swellings have a dark red and purple color. The tumor is firm in consistency. In one place there is a cavity which appears to be the remains of the pelvis of the kidney. On section the kidney is found to be almost replaced by a tumor mass and only at the upper end is kidney tissue seen. Here the cortex is pale, almost white, and swollen, and glomeruli cannot be seen. The tumor structure is pinkish-yellow in color and rises slightly above the cut surface, through which fine bands of connective tissue run. At places the tissue is opaque, while in some areas it is translucent and colorless, resembling hard starch. Microscopic sections show kidney tissue only occasionally. When it is seen, there are a few glomeruli and compressed tubules scattered through large masses of connective tissue. The tumor is composed of fine strands of connective tissue, which grow out apparently from the increased connective tissue of the cortex, and which extend in a branching papillomatous manner in all directions. The connective tissue forms a stroma of the main tumor cells which lie on both sides of the fine connective tissue strands. There are large cuboid or columnar epithelial cells, practically always lying in a single layer, possessing large vesicular nuclei with nucleoli, and resembling large tubular epithelium. Tubule-like structures are often seen. Cysts formed by the walls of connective tissue and epithelium are frequent, and small masses of blood are present. The epithelial cells do not appear to have undergone malignant changes, but in one or two places small nests of cells are arranged in a rather suspicious manner."

Diagnosis.—Papillomatous cystadenoma of the kidney. No definite signs of malignancy.

Watson and Cunningham[3] state that the adenomas of the kidney are both malignant and benign.

The papillary type usually prevails, but the alveolar is likewise common. The relation between the benign and malignant adenoma is obscure. The majority of pathologists believe that the two are identical, and that they differ from each other only in a clinical sense. There are transition forms from adenoma to carcinoma, although the transition is not a sharp one. It is probable that many of the malignant adenomata are benign in the first place, and that malignancy supervenes. It is impossible to say how long the disease has existed in the benign form, because the tumor may be unrecognized for many years.

In a series of ninety-one tumors of the kidney examined at the Massachusetts General Hospital, four were of the type of large papillary cystadenomata of the kidney.[4]

The accompanying photomicrographs of the tumor tissue illustrate many of the characteristic features of the disease.

Respiratory Signs of Surgical Anesthesia.—Though marked deepening of the respiration may precede, be synchronous with or follow whatever emotional excitement there may be, at any rate it is generally indicative of the early accomplishment of surgical anesthesia.—J. B. Bogan, in *New York Medical Journal.*

2. August, 1910, ten months after nephrectomy, patient is reported as doing light housework.
3. Genito-Urinary Diseases, ii, 231.
4. Nelson and Cunningham: Genito-Urinary Diseases, p. 220.

A COMBINED FORCEPS AND TONSILLAR SEPARATOR

A NEW TONSIL SNARE

CULLEN F. WELTY, M.D.
SAN FRANCISCO

In the enucleation of the tonsil I have found this combined forceps of value. Because of its length, all parts of the pharynx can be easily reached without interfering with other instruments. Because it can be used as a tonsil separator as well as a sponge carrier, not losing time consumed in changing instruments, the work is more quickly done. Because of the bluntness of the instrument the capsule of the tonsil cannot be punctured.

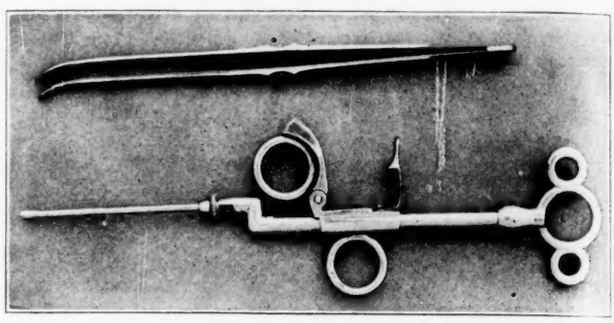

Fig. 1.—Combined forceps and tonsillar separator.

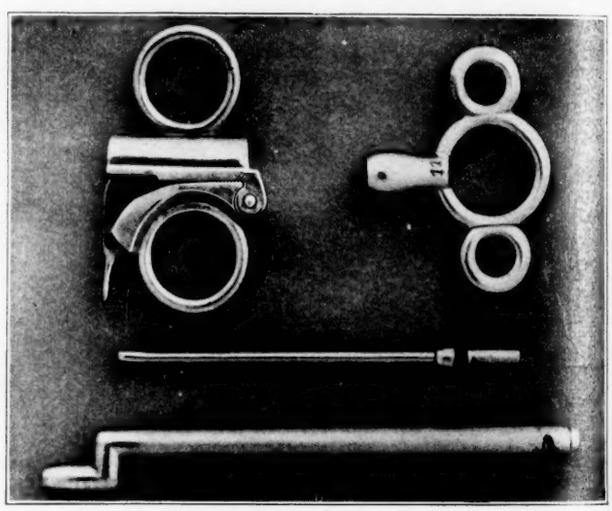

Fig. 2.—Showing parts of combined forceps and separator.

In order to use this instrument it is necessary that the tonsil be drawn taut with another forceps. An incision is then made at the point where the mucous membrane joins the tonsil, which will uncover the capsule, and should begin in front and be carried posteriorly until it begins to descend. Through this incision the tonsil is easily dissected or peeled out.

Directly after removal of the tonsil there is usually considerable hemorrhage. This forceps on account of the bend in the end is useful in making pressure to prevent an excessive loss of blood.

I have never been called to the hospital because of subsequent hemorrhage except in one instance, and in that the tonsil was not entirely removed. I am certain that

the blunt dissection with this instrument has given the good results obtained.

The features recommending this new snare are as follows: 1. It is strong, heavy and will not get out of order. 2. It locks together, instead of having screws or fasteners. 3. It is easily kept clean. 4. It is easily and quickly threaded. 5. It has an entirely new device for fastening the wire; when once clamped the harder you pull the tighter it becomes.

Shreve Building.

DIFFUSE IDIOPATHIC HYPERTROPHY OF THE MAMMARY GLANDS OF THE FEMALE *

A REPORT OF A NEW CASE AND A CONSIDERATION OF THE ETIOLOGY AND PATHOLOGY BASED ON DATA OF RECORDED CASES

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REPORT OF CASES

The following clinical history of the case was furnished by Dr. H. Matthey of Davenport, Iowa:

Patient.—The patient, a girl 13 years of age, when examined August, 1903, was 5 feet and 5 inches tall, weighed 101 pounds and was found to be of a nervous temperament.

Fig. 1.—Patient with mammary hypertrophy; from photograph taken shortly before amputation of the left gland.

Family History.—The patient's parents were both living and well, her father being 39 years of age and her mother 36. She had one brother and one sister, both living. In none of these other members of the family was there any undue enlargement of the mammary glands.

Personal History.—The patient had had the usual diseases of childhood. Enlargement of the breasts began in the early part of June, 1903, and continued at such a rate that in August she was taken to a physician who estimated that each breast weighed about 8 pounds. Pressure applied by means of a bandage and maintained for several months was without benefit. In October when the patient first consulted me, the breasts weighed about 12 pounds each. Operation was advised, but refused. She now drifted into the hands of quacks who treated the condition in various way, without giving any relief. In July, 1904, she returned to me in poor general condition, feeble, anemic and emaciated. Her weight was 106 pounds, a little more than half of which was contributed by the breasts. Because of these facts, it was deemed advisable to remove only one breast at a time (Fig. 1). The first operation was undertaken July 14, 1904. The amputated left breast weighed 28 pounds. After being two weeks in the hospital, she was allowed to go home to recuperate for the second operation. At this time her weight was 79 pounds. During the following two weeks she gained 13 pounds and returned for the operation, weighing at this time 92 pounds. The right breast was amputated Aug. 12, 1904. It weighed 26 pounds. Recovery was uneventful, healing being by primary intention. Patient remained in hospital two weeks and returned home in good general health and weighing 75 pounds. Six weeks after the second operation she menstruated for the first time and has been regular since. She was married in 1909 and has been delivered of a six-months developed child since. At present the general health of patient is good; weight, 115 pounds; height, 5 feet 9 inches.

PATHOLOGY OF SPECIMENS

This was essentially the same for the two glands.

Gross Pathology.—Shape: Both glands, which were rather spherical in shape and pendulous while attached to the body of the patient, became considerably flattened out between the skin surface and the base after their removal.

Size: The left gland, which was the larger, was, after removal from the body, 18 inches in diameter and 8 inches in thickness. Its greatest circumference was 58 inches and it weighed 28 pounds. The right gland was 14 inches in diameter, 7½ inches in thickness; its greatest circumference was 45 inches and weighed 26 pounds.

Fig. 2.—Base of left gland, showing lobulated and encapsulated appearance.

Surface Contour: The skin surface was smooth, being tightly stretched over the underlying gland substance. The nipple of each of the glands had become flattened out and the areola more diffuse, but less distinct than normally. The bases of the glands were distinctly lobulated; the lobulated areas varying from one to four inches in diameter (Fig. 2). The outlines of the glands at the base were so distinct as to be apparently well encapsulated.

Consistency: The glands were moderately soft in consistency. This was quite uniform throughout the gland mass, although on cut section certain areas were found to be much more firm in consistency than others. These were not distinct and circumscribed, but fused gradually with the more soft areas. A number of rather large ducts, some with a diameter of as much as ⅛ of an inch were visible on the cut surface. The

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

subcutaneous adipose tissue had entirely disappeared. Only a small amount of fat was still noticeable about the base of the gland (Fig. 3).

Color: The cut surface of the tumor was of a whitish-pinkish gray color. The pinkish tint was more marked in the firm than in the soft areas.

Microscopic Pathology.—Section from Firm Portion of Gland: The section consisted principally of full developed fibrous connective tissue with a fair number of capillary blood-vessels. The gland elements were found somewhat grouped in areas, corresponding to the lobules; the acini, however, were much more widely separated than in the normal gland. The acini which were of variable size, some quite large and many dilated, were lined by a single layer of a low columnar (almost cuboidal) gland epithelium, resting on a basement membrane consisting of flat cells. The lumen was free from

Fig. 3.—Cut surface of right gland, showing dark areas of glandular tissue, light areas of more pure connective tissue, and open spaces representing dilated ducts.

contents, except in a few in which debris, consisting of degenerated and desquamated cells, was found.

Section from Soft Light-Colored Portion of Gland: This section consisted almost entirely of fibrous connective tissue with only a very few gland elements. The connective tissue, which contained only a few widely separated nuclei, was somewhat edematous. There were numerous capillary blood-vessels and a number of fat cells.

Section through Skin, including a Portion of the Gland Substance of Medium Consistency: This section showed the connective tissue of the hypertrophied gland to be continuous with that of the subcutaneous tissue and the corium. Except for a few fat cells, the subcutaneous adipose tissue had entirely disappeared. The elastic fibers of the corium were fully as abundant as in the normal skin. I was unable to find any elastic fibers in the substance of the gland proper except, of course, in the larger blood-vessels.

Section from Base of Gland, Including the "Capsule": The "apparent" capsule of the gland was found to consist of condensed gland substance consisting of both gland and connective tissue elements. The glands were somewhat flattened.

Summary of Pathology.—The process was a diffuse hypertrophy affecting all parts of both glands rather uniformly and involving both the glandular and connective tissue elements, the increase affecting principally the latter. The gland acini were lined by a single layer of low columnar (almost cuboidal) epithelium, were larger than normal and more widely separated by intervening connective tissue, which was of the fully developed fibrous type. Capillary blood-vessels were numerous.

REVIEW OF CASES REPORTED

Diffuse idiopathic hypertrophy of the mammary glands is a rare condition. Several authors have collected data from a number of cases, but no attempt to collect all cases reported has been made for some time. In 1902 Kirchheim[1] collected most of the cases reported up to that time. I have reviewed the literature and have

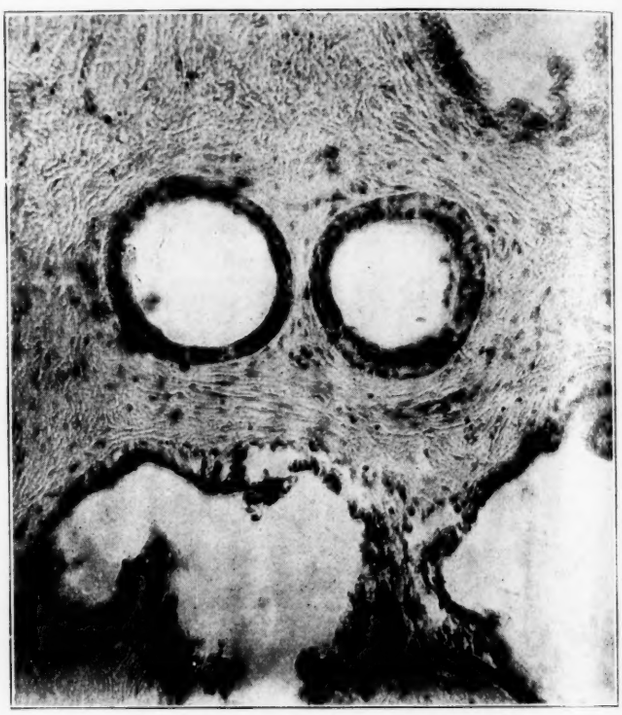

Fig. 4.—Photomicrograph of dense glandular portion of right gland showing irregular variously shaped acini lined by a single layer of low columnar epithelium.

made an attempt to collect all cases reported to date and have summarized the essential data from these cases, so far as such has been available. In some instances I have not been able to secure the original report. In many more the data was very meager. In the majority of cases no description of the pathologic process was given, and I have little doubt but that I have included some cases that are not instances of "true" hypertrophy. I have purposely omitted a case of excessive adiposity of the mammæ, diagnosed clinically as diffuse hypertrophy, of which I have the specimen, and another case concerning which I have been informed but of which no pathologic examination was made. I have not included in this paper the cases of mild degree of hypertrophy of the mammæ of the male (gynecomastia), or of senile parenchymatous hypertrophy (Bloodgood[2]), partial or

1. Kirchheim: Arch. f. klin. Chir., 1902, lxviii, 582.
2. Bloodgood: Surg., Gyner and Obst., 1906, iii, 721.

localized hypertrophy, and the still more mild types of so-called hypertrophy occasionally seen associated with pulmonary tuberculosis.

Although I have summarized the principal data from the cases reported, I shall in this paper limit the consideration to the etiology and pathology of the condition.

Number of Cases Reported.—Aside from the one which I have just described, I have been able to collect reports of sixty-nine other cases of diffuse hypertrophy of the female mammæ. Of these seventy cases sixty-two were bilateral and six unilateral, three affecting the right and three the left gland. In two instances I was unable to learn which glands were affected.

Age.—Although Bittner[3] reported a case of hyperplasia (probably not true hypertrophy) of the mammary gland in a girl 6 months old, the age limit of the reported cases of true hypertrophy extends from 11 to 42 years, with practically every intervening year represented. The vast majority begin to develop about the time or soon after puberty or during gestation. Fifty-eight per cent. of the cases not associated with gestation developed between the ages of 11 and 16 and 40 per cent. during the fourteenth and fifteenth years of age.

Classification of Cases.—Cases of idiopathic hypertrophy may be classified into (1) those associated with gestation and (2) those not associated with gestation, most of which are closely related to puberty.

1. *Gestation Idiopathic Hypertrophy.*—Of the seventy cases eighteen were of this type. Fourteen of these were bilateral and four unilateral. The relation to gestation is clearly indicated by the fact that, after the termination of pregnancy, the condition subsides, although it does not return completely to the normal, and that it frequently reappears during subsequent pregnancies. The enlargement usually begins during the first pregnancy. Sometimes, however, it occurs for the first time during the second or third. In one instance it did not develop until the eighth pregnancy.

2. *Cases Not Associated with Gestation.*—The relation of puberty to cases of hypertrophy is suggested by the fact that 58 per cent. of the cases not associated with gestation developed between the ages of 11 and 16, the period during which puberty ordinarily occurs, and that in a large number of cases menstruation did not set in until after the enlarged glands were removed. In many cases, however, there seems to be no association with either puberty or gestation.

Etiology.—The real cause of this condition is unknown. Such factors as heredity, traumatism, undue sexual activity, general malnutrition, etc., which have been mentioned in connection with the process, seem to have nothing to do with it. Pathologically the process appears to be simply an excessive development of the normal enlargement as seen especially at puberty and during gestation. Presumably the causes which produce the normal enlargement are also at work on this pathologic form, the latter being produced either because of a large amount (or undue activity) of the same cause, or a lack of the inhibitory influences which, under normal conditions, limit the extent of the enlargement.

Recent experimental work has shown that the normal enlargement of the glands is not always due to the same cause. The work of Lane-Claypon and Starling[4] in producing an increase in the size of the mammary gland of virgin rabbits by the injection of extracts from the body of rabbit fetuses has shown very conclusively that the enlargement of the mammæ during gestation is through the action of a hormone produced in the fetus. That this may also be the cause of the idiopathic gestation hypertrophy is very probable, especially inasmuch as that condition subsides after the termination of the pregnant state.

The cause of the normal enlargement of the glands at puberty is not so well understood. The evidence at hand seems to indicate that a hormone in the ovaries is the principal factor responsible for the development of the mammary glands outside of pregnancy. If this proves to be the case it would seem that removal of portions of the ovaries would be indicated in the treatment of the condition. Up to the present time the only treatment that has been of value is amputation of the glands. Removal of portions of the ovaries has not been tried, so far as I know.

It is very doubtful whether or not the cessation or irregularity of the menses, noticed shortly before and during the hypertrophy in many of the cases not associated with gestation, is of etiologic significance. This may simply be a symptom of the condition, as it is a symptom of other diseases in which the vitality is lowered. On the other hand is to be noted the fact that the general health is usually not affected until after the disease is well advanced, whereas the cessation of the menses is frequently of sudden occurrence several months before the glands begin to enlarge

Gross Pathologic Morphology.—Shape: The enlarged glands stand out prominently from the chest wall for some time. Later their weight causes them to become pendent and often pedunculated, the gland substance assuming a rather spherical mass, drawn away from the muscles of the chest and hanging over the front of the abdomen, sometimes as far down as the knees. Their large size frequently causes the patient much discomfort and sometimes necessitates the patient remaining in a recumbent position.

Size: The size of the different glands may be compared (1) by their greatest circumference and (2) by their weight.

1. The greatest circumference of the individual glands for which figures are available varies from 20½ inches to 51½ inches, the average being 31½ inches. The average circumference of the hypertrophied left glands is one inch more than the right.

2. The weight of individual glands varies from 1½ pounds to 64 pounds with an average per gland (of all cases) of seventeen pounds. The weight of the combined glands of cases of bilateral hypertrophy varies from three pounds to 124 pounds (Durston's[5] case) with an average of 37 pounds. In most cases and on a general average, the left gland weighed a little more than the right. The average weight of the gland in the cases of unilateral hypertrophy is 15 pounds. In the cases reported by Durston[5] and myself the weight of the two glands exceeded the weight of the remainder of the body.

Surface Contour: The surface of the glands is quite smooth, and skin tightly drawn. The stretching of the skin usually causes the nipples to be flattened out. In one instance they were reported as being retracted; in two, as having become enlarged—in Delfis'[6] case, as large as a hen's egg. The pigmented areas also become less definite and distinct as the skin becomes stretched. The

3. Bittner, W.: Fall von Hyperplasie beider Mammæ bei einen 6 Monate alten Mädchen, Prag. med. Wchnschr., 1895, xx, 492.

4. Lane-Claypon and Starling: An Experimental Enquiry into the Factors Which Determine the Growth and Activity of the Mammary Glands, Proc. Roy. Soc., London, 1906, lxxvii, B, 505-522.

5. Durston: Phil. Tr. Roy. Soc., London, 1669.

6. Delfis: Jour. de physiol. exper. de Magendie, 1825.

skin remains quite freely movable over the underlying gland, even though the subcutaneous fat tends to disappear and the connective tissue of the skin gradually fuses with that of the gland. In the later stages, the skin may become thick and hard. In many instances the superficial veins become very large and stand out prominently as blue streaks.

Consistency: During the early stages the hypertrophic glands are firm and elastic, as they are during the normal enlargement at puberty or during the early part of gestation. Later, when they become larger and pendent, they also become flaccid. At first the glands usually feel somewhat nodular; later, however, these tend to disappear. Even when the process feels quite diffusely uniform through the skin, the cut surface may show areas considerably more firm in consistency than others. Such areas diffuse into one another gradually.

Color: The color of the cut surface of the hypertrophic gland in the few cases in which it has been noted, is apparently the same as under normal conditions.

Microscopic Pathologic Morphology.—Unfortunately, microscopic examinations of the specimens were made in only about twenty of the cases. In all of the cases not associated with gestation, it is recorded that there is an increase of both the glandular and the connective tissue elements. In most instances the connective tissue is reported as being principally increased, although in four cases special mention is made of the marked glandular increase. The gland acini are usually described as being larger than normal, more widely separated and sometimes found to be lined with several layers of gland epithelium. I am inclined to think that this last-mentioned phenomenon is due principally to the thickness of the section and the cutting of the acini in an oblique manner. In many instances the glands are considerably dilated and contain granular degenerated material. Such changes in the glands have been likened to the changes that occur in the glands during the early stages of pregnancy. The fibrous connective tissue is usually described as being of the fully developed type with, as a rule, very few nuclei, although some are mentioned as being quite cellular—which may, of course, have been due to an associated inflammation. In the three cases of idiopathic gestation hypertrophy in which a microscopic examination was recorded, the microscopic findings were like those of the mammary gland during pregnancy. Such findings, indeed, may reasonably be expected.

Pathological Physiology.—Gestation hypertrophic glands usually functionate as do the normal ones, although it is often difficult to nurse the infant because of the flattening out of the nipple. Those not associated with hypertrophy are functionless during non-pregnant conditions, although it has been possible to squeeze colostrum-like fluid from the ducts in some cases. Usually, also there is no lactation after the birth of a full-term child. In several instances, however, there was normal lactation in the glands that had been enlarged before the pregnant state. In one case associated with gestation, there was marked galactorrhea of eight months' duration.

Nature of Pathologic Condition.—Idiopathic hypertrophy has been regarded variously by different authors as a circulatory (edema), an inflammatory, a neoplastic or as a simple hypertrophic process.

In favor of its being an edematous process is the rather sudden onset that has been reported in several cases. In the cases of Durston[5] and Delbet,[7] for instance, the patients retired in the evening, slept quietly as usual and in the morning on awaking found themselves scarcely able to turn around. When they tried to get up, the weight of the suddenly enlarged glands caused them to sink back. Usually, however, the onset is very gradual.

Opposed to its being a circulatory process is the fact that there was no mention made of pitting on pressure in the cases reported, nor has the tissue of the glands removed been reported as edematous. For a long time the enlarged glands are firm and elastic and stand out prominently from the body; this would not be the case in edema. The increase in connective tissue following edema is in the nature of a fibrosis rather than an increase of all of the tissue elements. The slight edema which I found in my specimens and which accounts in part for their great shrinkage when placed in formaldehyd solution may readily be explained by the interference with circulation caused by the pendant glands.

There is really no evidence in favor of its being an inflammatory process. The pain sometimes noticed may readily be accounted for on the basis of pressure and a stretching of the nerves.

The neoplastic theory has several supporters. In Porter's[8] case, in which the glands weighed 17 and 43 pounds respectively, the diagnosis made was intracanalicular fibroma. Kirchheim[1] regards it as a diffuse fibroma. It is true that a section of the hypertrophic gland may be like one from a case of adenofibroma, but a tumor is usually thought of as a more localized and circumscribed process, especially if it is benign. The idiopathic hypertrophy, however, which pathologically is benign, is a diffuse process involving all parts of the gland. The fact that it may begin as a rather localized process, limited to a certain part of the gland, simply means that such represents the beginning point, probably the most susceptible tissue, just as one gland sometimes becomes involved before the other.

Considered from all standpoints, it must be regarded as a simple hypertrophic process involving all of the elements of the gland, but especially the part which at the time, is the most actively growing tissue, namely, the glandular tissue during gestation and the connective tissue at other times, especially during puberty.

The question has been raised as to whether or not cases of unilateral enlargements are cases of true hypertrophy. With a clinical history like those of bilateral hypertrophy, with the same pathologic condition, so far as we know, and an average weight of 15 pounds as against 17 pounds in case of the bilateral type, there is no reason, it seems to me, why they should not be regarded as identical. Indeed, in Van Swieten's[9] case, the unusual enlargement of one breast which occurred during pregnancy subsided after the termination of gestation. During the second pregnancy it again enlarged.

Associated Pathologic Conditions.—When the glands become of large size, the friction of the glands against a bracing bandage or supporting clothing frequently causes an excoriation of the epidermis chiefly at the most dependent portion. Such friction is apt to be followed by inflammation, abscess and fistula formation, eczema, erysipelas and gangrene. In one case, there was a hernial protrusion of gland-substance through an excoriated opening. Although Billroth[10] reported a case

7. Delbet: Traité de Chirurgie (Duplay Reclus). v.

8. Porter: Boston Med. and Surg. Jour., March 3, 1892.

9. Van Swieten: Commentaria in H. Boerhaave Aphorism de cognoscendis et surandis morbis, Leyden, 1764, A iv.

10. Billroth: Krankheiten der Brustdrüsen, Deutsche Chirurgie, 1880, Instalment xli, 69.

of sarcoma and Bloodgood[2] a case of carcinoma in a gland idiopathically hypertrophied, such glands do not appear to be any more prone to malignant tumor formation than under other conditions. In several cases the axillary lymph-nodes were found to be enlarged. In the majority of these cases, there was some acute inflammation of the mammæ which readily accounted for the involvement of the lymph-nodes. In several, however, there was no recognizable acute inflammation of the mammæ. Even in such cases, the lymph-node enlargement was of a fibrous (chronic inflammatory) character. In no case has there been any metastatic formation of the hypertrophic mammæ.

GENERAL SUMMARY

1. Of the seventy reported cases of diffuse hypertrophy of the female mammæ, in eighteen the enlargement occurred during gestation; most of the others occurred about the time of or soon after puberty.

2. Of the seventy cases, sixty-two were bilateral.

3. Fifty-eight per cent. of the cases not associated with gestation developed between the ages of 11 and 16 and 40 per cent. during the ages of 14 and 15.

4. The etiology of the condition is obscure. It is very probably due to the action of the same hormones that produce the physiologic enlargements.

5. Pathologically, the condition is a simple diffuse hypertrophy, involving both glands and connective elements. The increase in the gland elements occurs principally in the cases occurring during gestation, whereas the connective tissue increase usually predominates in those not associated with that condition. The process appears to be essentially an exaggeration or continuation of the enlargements that affect the gland normally at puberty and during gestation.

6. The weight of the glands varies from 1⅓ to 64 pounds, the average per gland of all cases being 17 pounds. In one instance, one of the glands weighed 64 pounds and both glands, 124 pounds. In two instances the combined weight of the two glands exceeded the weight of the remainder of the body.

7. In cases associated with gestation, lactation is, as a rule, normal. In those hypertrophies not associated with gestation the glands seldom functionate, even after pregnancy.

Dubuque and Jefferson Streets.

ABSTRACT OF DISCUSSION

DR. A. S. WARTHIN, Ann Arbor, Mich.: I should like to ask Dr. Albert whether this woman was able to throw her mammary glands over her shoulder; a similar hypertrophy of the mammary gland is often seen in Hottentot women who are able to throw their breasts over their shoulders and suckle their children, who are carried in slings on their backs. I should also like to know to what type of man this woman corresponded. Did she have any features that go with the Australoid type or Negroid type? Would there be any anthropologic interest in this case as an instance of reversion?

DR. JAMES J. TERRILL, Galveston: Was there any pain associated with the condition? I remember seeing specimens from a somewhat similar case in the early part of this year. The patient, a girl aged about eighteen, had what was diagnosed as diffuse virginal hypertrophy of the breast. Both breasts enlarged but did not weigh more than two pounds each. One breast had to be removed, however, on account of excessive pain, the cause of which was never discovered; but on removal of the first breast, the pain disappeared and the other breast gradually grew smaller in size. Sections presented an appearance practically identical with that of the sections in Dr. Albert's case.

DR. GREER BAUGHMAN, Richmond, Va.: I saw a case in November, 1903, with Dr. George B. Johnson, in a young white woman. The left breast weighed 10¼ pounds; the right 7¾. The microscopic findings were almost the same as those in Dr. Albert's case—a true hypertrophy of the mamma—nonfunctionating, except that there was not so much dilatation of the acini and very little fat.

DR. HENRY ALBERT, Iowa City, Iowa: The patient was not able to throw her breasts over her shoulders. I did not see the patient; but I made careful inquiry of the clinician as to any peculiarities suggestive of reversion and was informed that there were none; nor did her parents present any unusual appearance. There was no pain except that which may be readily explained by the enlarged size of the breast. In the reported cases, however, there are a number associated with severe pain, and in a few instances pain was present from the beginning of the process.

A patient whom I saw three or four weeks ago presented considerable enlargement of the mammary glands. A diagnosis of diffuse hypertrophy was made. The process began about a year ago, but it was only during the last three months that the pain had become extreme. On examining the glands microscopically after removal we found nothing but fatty and a little fibrous connective tissue. One of the cases in the literature contains a reference to the fact that the hypertrophy was not due to glandular, but to fatty increase.

A STUDY OF MISTAKEN DIAGNOSES

BASED ON THE ANALYSIS OF 1,000 AUTOPSIES AND A COMPARISON WITH THE CLINICAL FINDINGS *

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The subject of this paper was suggested by my experiences in a weekly conference with senior medical students at the Harvard Medical School. At this conference the organs obtained from all the autopsies performed at the Massachusetts General Hospital during the week preceding are brought before the class. Before the demonstration of each set of organs I discuss with the students a typewritten summary of the clinical findings in the corresponding patient, including the history, the physical examinations, the reports on blood, urine, stomach contents and feces, the *x*-ray plates and all other data on which diagnosis was based during life. I never let anyone inform me beforehand of the autopsy findings. After we have committed ourselves definitely regarding the pathologic changes which we expect to find the hospital pathologist, Dr. Oscar Richardson, reads the autopsy protocol and demonstrates the organs.

In this exercise I have been forced once a week for three years to compare my diagnoses with post-mortem findings. It has proved so salutory and instructive, especially when I have been mistaken, that it has seemed to me well to summarize the results of a large series of comparisons between the judgments arrived at by a careful study of clinical data and the anatomic conditions revealed post mortem.

I. METHODS USED IN THE STUDY

I must first explain, as nearly as I can, the plan followed. It is not a simple matter to collate ante-mortem

* Oration in Medicine read before the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* Because of the space required, the article is slightly abbreviated in THE JOURNAL. It appears in full in the Transactions of the Section and in the author's reprints.

and post-mortem data in an intelligent way. One cannot simply read off the clinical diagnoses and note their correspondence or lack of correspondence with the anatomic findings, for:

1. It is often obvious when one reads the clinical record that the diagnosis has been copied from the autopsy protocol.

2. The clinical diagnosis may be so abbreviated as to omit important facts known during life. For example: When death occurs from heart disease the clinical diagnosis is often recorded merely as "mitral stenosis" without any statement regarding cardiac hypertrophy, dropsical effusions or terminal infections. Yet on reading the details of the record one may find evidence that the heart was enlarged, that a large amount of serous fluid has been removed from the abdomen and, perhaps, that some micro-organism had been isolated during life from the circulating blood. These facts warrant us in filling in the clinical diagnosis by the addition of a number of details. My comparisons, then, have been made between the diagnosis warranted by the recorded clinical data and the autopsy protocols.

3. In some cases it has been clear, after a little study, that the clinical diagnosis actually written on the records had been hurriedly filled in by an intern and did not represent the opinion of the attending physician. I recall one case in which the clinical diagnosis still stands as "neurasthenia" although the autopsy record shows that the patient died of cancerous pleurisy.

My comparisons, then, have been far from literal. In each case I have gone behind the recorded diagnoses and endeavored to reason out what diagnosis was justified by the facts as known during life. No other course was open to me if I was to avoid some quite ludicrous mistakes.

II. TYPES OF ERROR

In the accompanying tables I have attempted (a) to separate correct diagnoses from mistaken ones and (b) to subdivide the mistakes into errors of omission and errors of commission. By an "error of omission" I mean failure to find some lesion which in all probability contributed to kill the patient; for example, the failure to find a pneumonic solidification.

"Burnt-out" or obsolete lesions are often undiscovered during life and lead, therefore, to a discrepancy between ante-mortem and post-mortem findings, a discrepancy of interest but different from what I am now defining as an "error of omission." If, for example, the autopsy revealed pleural adhesions, and I am convinced from the written record and from my knowledge of the methods used in the hospital wards that these lesions did not contribute materially to the patient's last illness, and that no attempt was made to find these adhesions by testing the mobility of the lung borders or by any other method of investigation, I do not class the resulting discrepancy between anatomic and clinical results as an error of omission.

By an "error of commission" I mean the diagnosis during life of a lesion—such as cancer of the stomach—which autopsy shows is absent. This type of error is defined in contrast with some discrepancies regarding which we need not consider the autopsy as the court of last appeal. If, for example, a diagnosis of mitral regurgitation is recorded on the clinical record but not in the autopsy protocol, I consider this no proof that the clinical diagnosis is wrong. It is quite conceivable that the valve was insufficient during life owing to a muscular relaxation of which no convincing evidence is left after death. I have, therefore, attempted no comparison between the clinical and anatomic findings regarding mitral regurgitation. On the other hand, if mitral stenosis exists during life it should be demonstrable after death.

I shall now take up some of the statistics which represent our experience in the last thousand autopsies coming from the medical wards of the Massachusetts General Hospital.

III. DIAGNOSTIC ERRORS IN CERTAIN DISEASES OF THE HEART AND VESSELS

MITRAL STENOSIS

Correct diagnosis in	49 cases or 69 per cent.
Error of omission in	16 cases or 22 per cent.
Error of commission in	6 cases or 9 per cent.
Total,	71 cases

Most of these errors of omission were due to the fact that the patients were seen first within twenty-four hours of death, i. e., after the murmur had disappeared and at a time when very little evidence remained on which a diagnosis could be based.

Cases in which we mistakenly supposed that mitral stenosis existed are not so numerous as I had anticipated. Apparently we have learnt pretty well the lesson taught by Austin Flint nearly half a century ago. It seems to me well to emphasize here a fact often recorded, especially by English observers, but not sufficiently realized in this country. I refer to the presence of a presystolic murmur at the apex of the heart despite a sound mitral valve, not merely in cases of aortic regurgitation (as noted by Flint), but in any disease which has resulted in marked enlargement of the heart. In cases of chronic nephritis, pericardial adhesions, arteriosclerosis and hyperthyroidism, or any other cause, we often hear the murmur formerly identified with mitral stenosis. The murmur may be constant or transient. It may or may not be associated with a sharp, snapping first sound and an accentuated pulmonic second. It cannot be distinguished with any certainty from the murmur produced by mitral stenosis and will continue to lead us into error from time to time until some other and more accurate methods of diagnosis are discovered.

I have found it best systematically to disregard all presystolic murmurs heard at the apex of a markedly enlarged heart, unless the case has been under observation long enough for us to have recorded the murmur before the heart became markedly enlarged or unless we have a clear history of a long-standing infectious process, presumably involving the heart valves. In renal cases, arteriosclerotic cases and, indeed, in most patients beyond their fiftieth year, presystolic murmurs are of very little significance.

AORTIC STENOSIS

Correct diagnosis in	19 cases or 61 per cent.
Error of omission in	11 cases or 36 per cent.
Error of commission in	1 case or 3 per cent.
Total,	31 cases

I have been surprised to note that the diagnosis of aortic stenosis (always accompanied in this series by a regurgitant lesion) was correctly made in nearly two-thirds of our cases, and especially was I amazed that in only one case did we commit ourselves wrongly to this

diagnosis during life. It used to be a standing joke among our pathologists that the clinician always diagnosed aortic stenosis when only a roughening of the aortic arch was demonstrable post mortem. On the other hand, I have been equally astonished to learn that the pathologists found aortic stenosis so frequently where we had overlooked it during life. I am quite convinced that this lesion is often impossible of diagnosis by our present methods of physical examination. In this connection the following points have recently been impressed on me:

1. Aortic stenosis may exist despite the presence of an accentuated aortic second sound, although, as a rule, this sound is diminished or absent.

2. Aortic stenosis may exist in association with a "water-hammer" or "Corrigan" pulse, though the rule is against this. How these two facts are to be accounted for I have no idea.

3. With long-standing cases of "rheumatic" endocarditis involving the aortic valve in patients under 35 years of age, aortic stenosis is almost always present (as proved post mortem) whether there are any characteristic physical signs pointing to it or not.

AORTIC REGURGITATION

Correct diagnosis in	57 cases or 84 per cent.
Error of omission in	5 cases or 7 per cent.
Error of commission in	6 cases or 9 per cent.
Total,	68 cases

It will be noted that in the present series, as in that previously mentioned in my "Physical Diagnosis," our largest percentage of correct diagnoses in diseases of the cardiovascular system concern aortic regurgitation. This percentage was possible only because we have made it a rule to disregard diastolic murmurs unless there were vascular phenomena to correspond ("water-hammer" pulse, capillary pulse, etc.). Diastolic murmurs without these vascular phenomena have generally turned out, post mortem, to be associated with a sound aortic valve. I appreciate that the figures here presented regarding aortic regurgitation have less value than those relating to the stenoses, since it is impossible to deny that the aortic ring might stretch during life sufficiently to produce regurgitation and yet show no evidence of such stretching post mortem. Yet, for reasons which I cannot here take the space to present, I do not believe that the error attributable to this possibility is a considerable one.

CHRONIC MYOCARDITIS

Correct diagnosis in	13 cases or 22 per cent.
Error of omission in	15 cases or 26 per cent.
Error of commission in	31 cases or 52 per cent.
Total,	59 cases

I have given up making the diagnosis of chronic myocarditis, and I believe that the term should be stricken from our text-books on the practice of medicine. It is an anatomic condition, like acute interstitial nephritis, having no corresponding manifestations recognizable during life. A correct diagnosis of chronic interstitial myocarditis, of acute degeneration of the myocardium such as occurs in fevers, or of the fatty change observable in most cases of pernicious anemia, is wholly a matter of luck. There are no clinical symptoms and no physical signs constantly associated with any one of these conditions.

When a patient has suffered from well-marked angina pectoris and shows clear evidence of arteriosclerosis in the brain, the kidney or the peripheral arteries, we may guess that his coronary arteries are somewhat narrowed and that a fibrous myocarditis has resulted. But even then we may be wrong, as I have often been convinced post mortem. The evidence on which the diagnosis of myocarditis is ordinarily based points merely to a *myocardial insufficiency* such as may be produced by a great variety of causes without the presence of any granular, fatty or fibroid change in the heart. Further, the anatomic diagnosis of fibrous myocarditis post mortem is satisfactory only when it is positive. To say that a fibrous myocarditis does not exist one must have cut the heart into mince-meat and then sectioned and stained each morsel of the hash. The absence of gross fibroid changes demonstrable after a few knife-cuts into the ventricular walls, by no means excludes an extensive though microscopic fibroid change.

One of the most surprising things in this series of autopsies has been the not infrequent occurrence of gross fibroid myocarditis in hearts which were perfectly sufficient during life, and the still more frequent absence of any demonstrable lesion post mortem in hearts that were markedly insufficient during life. As will be seen by the figures quoted above we were wrong in more than four cases out of five in our diagnosis of myocarditis.

ARTERIOSCLEROSIS

Correct diagnosis in	131 cases or 60 per cent.
Error of omission in	77 cases or 35 per cent.
Error of commission in	12 cases or 5 per cent.
Total,	220 cases

Most of the correct diagnoses in this group rested on inferences from general knowledge of pathology rather than on physical examination. If a patient has symptoms pointing to a non-traumatic cerebral hemorrhage it is fairly safe to assert that cerebral arteriosclerosis will be found, especially if the sufferer is middle-aged or older. If angina pectoris has tortured a man for months, it is very probable that his coronary arteries are diseased.

THORACIC ANEURISM

Correct diagnosis in	12 cases or 50 per cent.
Error of omission in	10 cases or 42 per cent.
Error of commission in	2 cases or 8 per cent.
Total,	24 cases

In two cases a mistaken diagnosis of aneurism was made owing to too great reliance on *x*-ray findings, in the absence of other important evidence. In one case I believe that the mistake cost the patient his life. Supposing his malady to be incurable, we allowed him to use narcotics for pain to an extent that ultimately proved fatal. At autopsy there was no trace of aneurism or of any other sufficient cause for death.

The classical difficulty of deciding between thoracic aneurism and mediastinal tumor has occurred five times in this series; in every case the autopsy showed aneurism. As a result of these and other experiences in this field I have come to use the following rule: When still in doubt between aneurism and tumor after all proper methods of investigation have been exhausted call it aneurism.

Abdominal aneurism is distinctly rare in my field of work, occurring but three times in 2,000 autopsies. Our autopsy material includes a relatively small number of syphilitics. Possibly it is for this reason that I have been taught by experience that when we have our

annual or semi-annual discussion about the bed of a hospital patient who complains of epigastric pulsation ("aneurism or dynamic aorta?") the doubtful cases always turn out not to be aneurism, i. e., the patients recover and remain well when reassured.

CARDIAC HYPERTROPHY AND DILATATION

Correct diagnosis in	223 cases or 66 per cent.
Error of omission in	113 cases or 33 per cent.
Error of commission in	3 cases or 1 per cent.
Total,	339 cases

Had we relied wholly on palpation, percussion and auscultation for the estimation of the heart's dimensions I feel sure that our failures would have been far more numerous. Blood-pressure estimations have helped us greatly, and if we could have employed fluoroscopy in every case we could doubtless have done far better.

The distinction between dilatation and hypertrophy has not been successfully made in this series. What clinically seemed an acute dilatation has usually turned out after death to be a chronic hypertrophy and dilatation.

It will be noticed that in six of the seven types of cardiovascular disease thus far discussed, the percentage of failures ranges in the neighborhood of 33 per cent.; thus:

Aneurism	48 per cent.
Arteriosclerosis	40 per cent.
Aortic stenosis	39 per cent.
Hypertrophy and dilatation	34 per cent.
Mitral stenosis	31 per cent.
Aortic regurgitation	16 per cent.
Average	34 per cent.

In the acute infectious lesions presently to be discussed our record is so different as to indicate that from the diagnostic standpoint they belong in a different and less accessible class. But before passing to the consideration of these more difficult diagnostic problems I wish to return for a moment to some of the difficulties attending the diagnosis of mitral regurgitation. I have not attempted to estimate the number or the nature of our failures in the diagnosis of this lesion because we have, in my judgment, no standard by comparison with which we can get our bearings. But the study of hearts before and after death has further convinced me that mitral regurgitation (that commonest of all cardiac diagnoses) is not only an unverifiable but usually a superficial judgment—about as definite as tachycardia. What we chiefly need to know about mitral regurgitation is what is behind it. Does the orifice leak because of an infectious process involving the myocardium, because of a chronic nephritis which has thickened and stretched the heart, because of hyperthyroidism, beer or arteriosclerosis? Or, rarest of all, is there a purely mechanical deformity of the valve or valve curtains? In all cases, except those belonging to this last group, i. e., in at least nine-tenths of all cases in which we are likely to make the diagnosis of mitral regurgitation we should add it, like an appendage, to some other and more fundamental designation. Thus, such diagnoses as "chronic nephritis, hypertension, cardiac hypertrophy and dilatation with mitral regurgitation," or "arteriosclerosis, myocardial insufficiency, relative mitral incompetence," or "infectious arthritis and myocarditis with mitral leakage," should, I think, replace the great majority of those now standing on our record-books simply as "mitral regurgitation."

The origin, prognosis, course, probable complications and treatment—all that is most important about the case—is suggested not by the leakage but by the diseases which have produced it and are indicated in the earlier parts of the diagnoses above suggested. As I look over the annual reports of our hospitals and note the great number of cases recorded merely as mitral regurgitation, it seems to me hardly more sensible than if one made so many diagnoses of "short breath" or "cough."

ACUTE ENDOCARDITIS AND ULCERATIVE ENDOCARDITIS

Correct diagnosis in	23 cases or 39 per cent.
Error of omission in	32 cases or 54 per cent.
Error of commission in	4 cases or 7 per cent.
Total,	59 cases

ACUTE PERICARDITIS

Correct diagnosis in	11 cases or 20 per cent.
Error of omission in	38 cases or 70 per cent.
Error of commission in	5 cases or 10 per cent.
Total,	54 cases

Most of the errors listed in these two groups are, I believe, inevitable at the present time. There are usually no distinctive physical signs either of acute endocarditis or of acute pericarditis, especially when they occur in the terminal stages of chronic disease. Fortunately it makes at present very little difference in our treatment whether we recognize these items of a general infection or not.

IV. RESPIRATORY SYSTEM

LOBAR PNEUMONIA

Correct diagnosis in	116 cases or 74 per cent.
Error of omission in	23 cases or 15 per cent.
Error of commission in	18 cases or 11 per cent.
Total,	157 cases

Regarding these cases of lobar pneumonia two comments seem to me worth making. First, it should be explained that some of the successful diagnoses of lobar pneumonia were made without distinctive physical signs of a process of reasoning which issued in the judgment "That is the sort of case in which a terminal pneumonia might well occur." This sort of reasoning works backward from familiar disease-groups previously encountered post mortem. One recognizes during life one or more members of such a group and infers the presence of another. Alcoholism and trauma with an unexplained fever and leukocytosis is a familiar group pointing in the majority of cases to a larval pneumonia not revealed by the pulmonary signs. Such an inference is very far from being inevitable, yet experience has convinced many that reasoning of this type is valuable if used cautiously and provided it always goes hand in hand with a thorough study of the patient's history and of the present condition.

Another observation is suggested by the numerous diagnoses of pneumonia when this condition was not actually present. Such mistakes were especially common in patients who were comatose or partially so. The type of congestion or "settling" often found post mortem in the lungs of such sufferers may produce all the classic signs of a full-blown lobar pneumonia though absolutely no solidification; nothing but a soggy lung is discoverable after death. I have often had a similar experience in cases involving marked cardiac insufficiency with or

without a considerable degree of hydropericardium. The signs apparently of solidification at the left base (in the so-called "pressure area" of pericardial effusion) associated with fever, leukocytosis and cough have often led me to a false diagnosis of pneumonia no sign of which was discernible post mortem.

BRONCHOPNEUMONIA

Correct diagnosis in	31 cases or 33 per cent.
Error of omission in	60 cases or 64 per cent.
Error of commission in	3 cases or 3 per cent.
Total,	94 cases

One might imagine that the very large percentage of error in our diagnoses of bronchopneumonia arose from the inclusion of infants and young children whose lungs are notoriously apt to show after death (from whatever cause) unsuspected areas of bronchopneumonia. But this table contains only cases of adults. I excluded all the cases of younger patients because I felt from the start quite hopeless of successful prediction in this field.

I feel convinced, however, that we may apply to adults the old adage of the pediatric specialists: "When you have the signs of bronchitis but the patient is obviously too sick for (simple) bronchitis, call it bronchopneumonia."

I have been much impressed by a series of typhoid patients dying with the signs only of bronchitis but showing extensive bronchopneumonic areas post mortem, and I am inclined to believe that in many "bad colds" the patch of "sticky râles" which hangs on for a week or more in one or another lower lobe posteriorly represents in fact a bronchopneumonia.

PHTHISIS (ACTIVE)

Correct diagnosis in	32 cases or 59 per cent.
Error of omission in	16 cases or 30 per cent.
Error of commission in	6 cases or 11 per cent.
Total,	54 cases

MILIARY TUBERCULOSIS

Correct diagnosis in	28 cases or 52 per cent.
Error of omission in	20 cases or 37 per cent.
Error of commission in	6 cases or 11 per cent.
Total,	54 cases

In explanation of these tables we must note that:

1. I have left wholly out of the account the numerous cases of obsolete or healed phthisis.

2. The 30 per cent. of unrecognized cases was made up mainly of cases seen for the first time within a few hours of death, when all distinctions are blurred.

3. In the effort to recognize doubtful incipient cases we have frequently used radiography, but so far without getting any reliable information not obtainable by other methods. An increased resistance to the passage of *x*-rays is an excessively delicate but also a very general indication, capable of a multitude of explanations and produced by a multitude of causes other than tuberculosis and often indistinguishable from each other by radiographic evidence.

The correct diagnoses of miliary tuberculosis would have been much fewer had we not adopted some years ago the rule, "When a case is clinically one of tuberculous meningitis, call it miliary tuberculosis and you will rarely be contradicted at autopsy." Tuberculosis is practically never confined to the meninges, though in many cases miliary processes make themselves apparent only in the central nervous system.

V. URINARY SYSTEM

ACUTE NEPHRITIS

Correct diagnosis in	5 cases or 16 per cent.
Error of omission in	20 cases or 62 per cent.
Error of commission in	7 cases or 22 per cent.
Total,	32 cases

Some years ago I undertook a critical study of the urinary reports and post-mortem findings in the different types of nephritis. I was much impressed at that time with the large percentage of mistaken diagnoses of acute nephritis—especially the errors of omission. In the present study of another series of cases, the same facts claim attention. It must be stated at the outset that our material contains no cases of scarlet fever; very few of diphtheria and that, as we have no maternity department, our cases of the puerperal type are confined mainly to eclampsia. In the material so limited we find almost no recognizable cases of acute nephritis. Most of those which in former years we called acute we now recognize (thanks to blood-pressure measurements) as chronic with acute exacerbations. For prognosis, and in a lesser degree for treatment, this distinction is important.

Our cases of acute nephritis, recognized and unrecognized, belong mostly in one of three groups:

1. Those due to pneumococcus infections.
2. Those due to infection by the organism of septic endocarditis.
3. Those due to mercurial poisoning.

Our verified diagnoses of acute nephritis have been made chiefly by following these etiologic hints and not from the urinary findings. Given a case of mercurial poisoning, of general pneumococcus infection or of "malignant endocarditis," with or without arthritis, and it is fairly safe to predict that an acute nephritis will develop and will be demonstrated post mortem if the issue is fatal. But this is not a secure basis for diagnostic structures, and we have not yet been able to build much on this or on any other foundation. We doubt whether others can do better at the present time.

CHRONIC GLOMERULAR NEPHRITIS

Correct diagnosis in	53 cases or 74 per cent.
Error of omission in	9 cases or 12 per cent.
Error of commission in	10 cases or 14 per cent.
Total,	72 cases

CHRONIC INTERSTITIAL NEPHRITIS

Correct diagnosis in	25 cases or 50 per cent.
Error of omission in	19 cases or 38 per cent.
Error of commission in	6 cases or 12 per cent.
Total,	50 cases

In marked contrast with our failures in acute nephritis is our large percentage of success in chronic glomerular nephritis[1]—the type often termed chronic diffuse, chronic parenchymatous nephritis or secondary contracted kidney (Senator). Most of our errors were in

1. Judging by the averages of this whole study I consider anything over 66 per cent. of verified diagnoses as a "high" percentage of success, though I admit that even our best is far from brilliant.

patients seen only in the moribund state and the same is true of the failures recorded in chronic interstitial nephritis.

In distinguishing these two types of nephritis (i. e., those due probably to the results of early infection and those due to arteriosclerosis, wear and tear and senility) I have noticed that most of those associated with any considerable degree of anemia usually turn out to be of the glomerular type. Anemia and uremia are, perhaps, due to the same metabolic poison, while in the interstitial cases we have less anemia and less uremia—the symptoms being chiefly those of circulatory failure.

VI. NERVOUS SYSTEM

CEREBRAL HEMORRHAGE

Correct diagnosis in	34 cases or 67 per cent.
Error of omission in	4 cases or 7 per cent.
Error of commission in	13 cases or 26 per cent.
Total,	51 cases

CEREBRAL TUMOR

Correct diagnosis in	8 cases or 72 4/5 per cent.
Error of omission in	2 cases or 18 1/5 per cent.
Error of commission in	1 case or 9 per cent.
Total,	11 cases

"Cerebral hemorrhage" is here used in the broad sense of "apoplexy," including all sudden attacks of coma and paralysis due to thrombosis, to acute softening or to embolism of the cerebral arteries. It is confessedly impossible to distinguish hemorrhage, rapid thrombosis and embolism by any study of the resulting disturbances of function. With this understanding it may be said that our diagnostic campaigns in this field have obtained an average degree of success. I have been struck, however, with the very considerable proportion of cases which presented during life the ordinary features of apoplexy but showed after death only an arteriosclerotic degeneration of the cerebral arteries without hemorrhage, embolism, thrombosis or acute softening. These cases are like some of those on which Pal based his interesting theory of vascular crises[2] as an explanation of apoplectiform seizures without demonstrable gross lesions post mortem.

Of the small group of cerebral tumors here studied, I will merely say that although we usually were correct in predicting the presence or absence of tumor somewhere within the skull, the attempts at localizing the growth were failures in most cases.

SEPTIC MENINGITIS

Correct diagnosis in	23 cases or 64 per cent.
Error of omission in	8 cases or 22 per cent.
Error of commission in	5 cases or 14 per cent.
Total,	36 cases

TUBERCULOUS MENINGITIS

Correct diagnosis in	26 cases or 72 per cent.
Error of omission in	5 cases or 14 per cent.
Error of commission in	5 cases or 14 per cent.
Total	36 cases

Under the general title of "septic meningitis" I have included the epidemic meningococcus cases, together with those due to the pneumococcus and the pyogenic organisms, whether invading the meninges from the middle ear or elsewhere. I shall omit discussion both of this group and of the tuberculous cases following.

2. Pal: Gefässkrisen, Berlin, 1905.

VII. DIGESTIVE SYSTEM

GASTRIC CANCER

Correct diagnosis in	30 cases or 72 per cent.
Error of omission in	7 cases or 17 per cent.
Error of commission in	5 cases or 11 per cent.
Total,	42 cases

PEPTIC ULCER (GASTRIC OR DUODENAL)

Correct diagnosis in	9 cases or 36 per cent.
Error of omission in	14 cases or 56 per cent.
Error of commission in	2 cases or 8 per cent.
Total,	25 cases

HEPATIC CIRRHOSIS

Correct diagnosis in	19 cases or 61 per cent.
Error of omission in	9 cases or 30 per cent.
Error of commission in	3 cases or 9 per cent.
Total,	31 cases

Our relatively successful dealing with the neoplasms in this table forms a sharp contrast with the shocking failures which were the rule when the diagnosis of peptic ulcer was attempted. Among the fourteen ulcers which we failed to recognize during life nine were gastric and five duodenal. In two cases (Autopsies 637 and 1077) the patient had cirrhosis of the liver (ante-mortem and post-mortem diagnosis) and the gastric hemorrhages were attributed to this. Two patients (Autopsies 2278 and 3441) entered the hospital with the history, symptoms and signs of meningitis, which was confirmed at autopsy. In one case the history distinctly suggested ulcer; in the other, a tuberculous case, there were no symptoms pointing to the gastro-intestinal tract. Seven patients (Autopsies 526, 1161, 1829, 1861, 2024, 2135, 2388) entered the hospital acutely ill with disease outside the gastro-intestinal tract (lobar pneumonia, cancer of the uterus with extensive metastases, cardiovascular degeneration, uremia, congenital syphilis, apoplexy, diabetes). One of these patients, a diabetic boy of 17, had had for three months stomach symptoms quite compatible with gastric ulcer though not characteristic of it. I doubt whether any surgeon would have wished to operate on him in his toxemic and emaciated condition. The other six of the seven patients last referred to had no gastric signs or symptoms whatever.

There remains a group of three cases out of the fourteen in which a diagnosis should, perhaps, have been made. One of them (Autopsy 1586) was seen twice by Drs. Maurice H. Richardson and F. G. Balch, who could make no diagnosis and advised against exploration on account of uncompensated heart disease (autopsy showed insufficiency of the mitral, aortic and tricuspid valves). The second case (Autopsy 1604) had a typical ulcer history, but the abdominal symptoms were obscured or disregarded on account of what was taken to be an acute pneumothorax. Autopsy showed a "subphrenic hypopneumothorax" pushing the diaphragm up to the level of the third rib in front. In view of the frequent occurrence of this type of subphrenic abscess after perforation of a peptic ulcer I think this diagnosis should have been made. The third patient (Autopsy 1064), a woman of 68, would permit no examination, far less exploration of her abdomen.

In two men, each 35 years old (Autopsies 1238 and 1405) we made the diagnosis of peptic ulcer and were contradicted at the autopsy. One had had "dyspepsia" for four years and was seized the night before he entered the hospital with violent epigastric pain and tenderness not associated, however, with muscular spasm. At autopsy next day a cyst of the pancreas was found to have ruptured into the peritoneum with a resulting general peritonitis. The other man came to the hospital for persistent vomiting of ten days' duration. Soon after entrance he vomited 10 ounces of pure blood. He had also marked cerebral symptoms attributed by a neurologic consultant to cerebral syphilis. At autopsy the stomach showed nothing abnormal. Death was due to chronic interstitial nephritis.

VIII. MISCELLANEOUS

TYPHOID FEVER

Correct diagnosis in	53 cases or 92 per cent.
Error of omission in	0 cases or 0 per cent.
Error of commission in	5 cases or 8 per cent.
Total,	58 cases

DIABETES MELLITUS

Correct diagnosis in	19 cases or 95 per cent.
Error of omission in	0 cases or 0 per cent.
Error of commission in	1 case or 5 per cent.
Total,	20 cases

In typhoid and diabetes the percentage of errors is notably smaller than in the previous groups. This is what one would expect from the sharply cut symptomatology and semeiology of these diseases. Had these cases included any prior to the discovery of the Widal test the proportion of mistakes in the typhoid group would no doubt have been much larger.

The error in the diagnosis of diabetes occurred in a case which was under observation only a few hours before the fatal termination. What seemed to be diabetic coma turned out to be apoplexy with symptomatic glycosuria. It was afterwards learned that the urine had been examined previous to his seizure and had contained no sugar. His previous history showed nothing pointing to diabetes. It must be noted, however, that post-mortem examination is not capable of refuting a well-fortified ante-mortem diagnosis of diabetes.

The five cases in which typhoid was erroneously supposed to exist are of considerable interest and warrant brief analysis did space permit. They confirm the assertion which I have elsewhere made[3] that typhoid is simulated (in New England) by only two other diseases, tuberculosis and general septicemia. In this series two of the five cases supposed to be typhoid turned out to be cases of miliary tuberculosis; the other cases were general septicemia.

SYPHILIS

Cerebral syphilis is a diagnosis quite frequently made at the Massachusetts General Hospital, but so far as I know it has never been both made and confirmed during the years (1899 to 1909, inclusive) covered by this report. Two cases with all the traditional evidences of cerebral syphilis, one of which had a positive Wassermann reaction, turned out to be tuberculous meningitis at autopsy; another case showed only chronic interstitial nephritis; in a fourth case multiple thromboses had occurred in the great venous sinuses of the cranium without any of the recognized causes for such thrombosis. In the only case actually characterized by intracranial syphilitic lesions post mortem they were not recognized in life.

Two other cases of syphilis have recently taught me lessons. One had the ordinary evidences of Banti's disease, splenomegaly and marked anemia followed some months later by ascites. The history gave no hint of syphilitic infection. Dr. Wilder Tileston found a perforation of the nasal septum and suggestive irregularities in the surface of the scalp and of the shin bones, just in time to save the patient from splenectomy. Under potassium iodid and mercury the ascites and anemia disappeared, the spleen shrunk to one-half its former size and the patient made a complete and lasting symtomatic recovery.

The other patient, said to have malaria, had chills, intermittent fever, enlarged spleen and malarial organisms in the blood. I found the liver also enlarged, no malarial organisms in the blood, and obtained a full history of previous syphilitic infection. All symptoms promptly disappeared a year ago under antisyphilitic treatment and have not recurred since.

In order to keep this paper from extending beyond its already inordinate length, I shall try to condense the rest of my data into maxims which should have the merit of brevity if not of wit or clearness, incorporating my summary and conclusions with them.

SUMMARY AND CONCLUSIONS

1. Never make a diagnosis of uremia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right.

2. Never make a diagnosis of ptomain poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis.

3. Make no diagnosis of hysteria, neurasthenia or psychoneurosis in a patient whose symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arteriosclerosis, hyperthyroidism, dementia paralytica, or pernicious anemia.

4. Diagnoses of tertian malaria in patients whose symptoms resist quinin more than three days are almost invariably wrong.

5. Bronchial asthma beginning after 40 usually spells heart or kidney disease.

6. Epilepsy beginning after 40 usually means dementia paralytica or cerebral arteriosclerosis.

7. Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis.

8. Most cases of "bronchitis" mean tuberculosis, bronchopneumonia or multiple bronchiectasis cavities.

9. Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, tonsillitis and pneumonia) "acute" nephritis usually turns out to be chronic.

10. Acute gastritis and gastralgia usually mean appendicitis, gall-stones or peptic ulcer.

11. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly.

12. An *x*-ray of the shin-bones may give the first hint of an active syphilitic process in the joints or internal viscera.

3. Cabot: The Three Long-Continued Fevers of New England, Boston Med. and Surg. Jour., 1908.

13. Systolic or presystolic murmurs, heard best at the apex of a markedly enlarged heart, rarely mean valve lesions.

14. Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease unless there are characteristic jerkings in the peripheral arteries.

15. Myocarditis is a diagnosis which should never be made clinically.

16. Besides the direct evidence afforded by the history and the various methods of physical and chemical examination, diagnosis profits much by taking account of certain familiar pathologic chains or groups of them. Given one or two members of the group it is often wise to act as if the other were present, provided, of course, that the direct evidence in no way contradicts us.

17. Cerebral localization applied to tumors, hemorrhages and the like is still in its infancy.

18. The clinical diagnosis of the so-called diseases of the blood is the easiest and safest in medicine.

190 Marlboro Street.

THE ELECTROCARDIOGRAM IN CLINICAL DIAGNOSIS *

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In the study of cardiac function by instrumental means, a number of methods have been employed, each of which has yielded information which was not obtainable with the others. The study of the arterial pulse has taught us much regarding the relation between cardiac output and peripheral resistance; the study of the blood-pressure has taught us to estimate accurately the force of the heart-beat and the factors which control it; the *x*-ray examination has given us a means of observing the changes in volume of the four chambers of the heart; and the study of the venous pulse has enabled us to detect many changes in the origin and propagation of the cardiac contraction. In spite of the great additions which these methods have made to the study of the heart, there is still much information that they are unable to furnish, and some of this is yielded by studying the electric variations produced in the body at each beat of the heart.

Considered electrically, the human body may be regarded as a battery with the two arms and two legs as its natural and most convenient poles. Owing to processes going on in the body and in the skin, the potential at each of these poles is different; hence, if any two of these limbs are dipped into zinc pans containing salt solution and connected with one another by wires, a constant current is generated; and if a very sensitive galvanometer is placed in the circuit it is deflected by this "body current"—or, as it is usually termed, "rest-current."

The rest-current is due simply to the difference of potential between any two parts of the body and is independent of any muscular contraction. Besides this, another current (action-current) is set up whenever any muscle acts, and this action current adds its effect to that of the body current already present and causes the galvanometer to swing each time that it is generated, that is, every time the muscle acts. Action of any muscle can cause such action-currents, and even small movements of the fingers placed in the salt solution are accompanied by very large deflections; but if the patient is kept perfectly quiet and there is no tremor the only important deflections are those caused by the cardiac action.

The electric variations accompanying the cardiac action have an intensity of from 1/1000 to 3/1000 of a volt, and consequently could not be studied accurately until an extremely delicate galvanometer had been invented. Professor Einthoven of Leyden has invented such a galvanometer, which consists of a very fine quartz

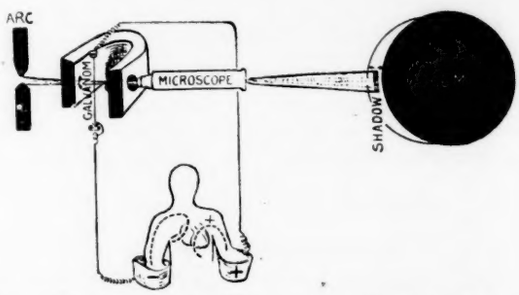

Fig. 1.—Diagram of a simplified electrocardiograph, showing also the distribution of the electrical changes about the heart. The patient is supposed to be seated with his hands immersed in the jars of salt solution (+ and —).

or platinum thread, so fine that it is barely visible and so light that it can scarcely be weighed by the most delicate balances. This thread is suspended in the field of a permanent magnet or of an electromagnet. When the current from the body passes through the thread, it charges the latter and causes it to be attracted or repelled by the poles of the magnet, and the thread is so light that it is deflected without delay by these changes in the electromagnetic field. The movements of this thread are magnified with a powerful microscope, illuminated with an arc-lamp, and the shadow is photographed on a moving drum 6 or 8 feet away (Fig. 1). By this method, it is possible to study very small currents.

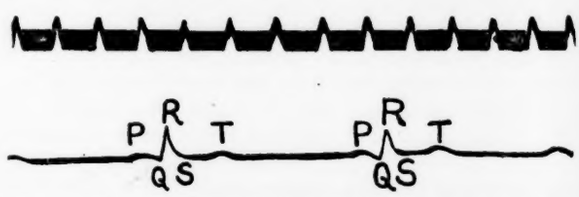

Fig. 2.—Typical electrocardiogram from a normal man. Current led off from right hand and left foot (D 2). Upper line, timer marking fifths of seconds.

It is even possible to connect distant points with the galvanometer and thus to record the hearts of patients who are lying in their beds in the wards, or to connect the laboratory with distant hospitals; but grounded circuits cannot be used for this purpose. Professor Einthoven has made most of his tracings from patients in Professor Nolan's wards of the Leyden hospital, a mile and a half away from his galvanometer.

Even 1/1000 of a volt is sufficient to cause a marked deflection, 4 mm. with our instrument, 1 cm. with the larger instruments. In Baltimore we have worked with the small permanent magnet and a platinum filament. This has given in the main very satisfactory results, but we hope, next year, to have the larger and more delicate apparatus.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910.

The electrical changes during each cardiac cycle are quite characteristic and correspond to the successive activities of the atrium and the ventricle. The base where the atria are situated becomes negative before the atrial activity, which is followed by another, due to the ventricular activity.

As will be noticed, the variations in potential are a little different if they are led off at different parts of the body, and the curves thus derived differ slightly from one another. Since Einthoven's first work, it has been customary to take records from three different derivations: the right hand and left hand—designated as the first derivation (D1); the right hand and left foot, the second derivation (D2); and the left hand and left foot, third derivation (D3). The second derivation shows the greatest oscillations; the third derivation is the most important for determining hypertrophy of the left ventricle.

The typical form of electrocardiogram is shown in Figure 2. As can be seen, the first wave (P) is a small

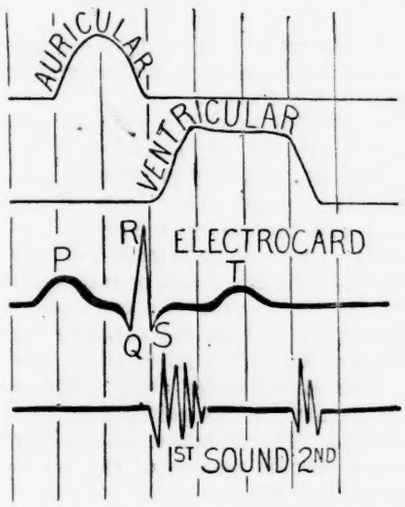

Fig. 3.—Diagram showing the time relations between the waves of the electrocardiogram, the heart sounds and the contractions of auricles and ventricles.[1] Vertical divisions indicate tenths of a second.

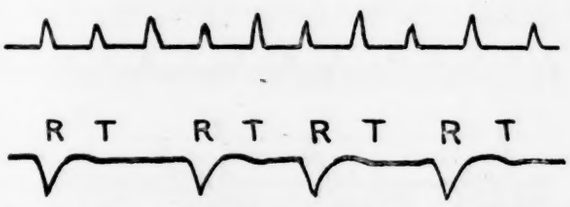

Fig. 4.—Upper line, timer, marking fifths of seconds; lower line, electrocardiogram. Inversion of the R and T waves due to hypertrophy of the left ventricle. Current led off from left hand and left foot (D 3). The P wave, due to the atrial activity, is absent.

one due to activity of the atria (P wave). This is followed by a very small depression of the curve below the base line, Q depression. Then comes the wave due to the action of the ventricles, a large wave (R), which sets in suddenly and as suddenly subsides, falling below the base line (S depression), and this wave in turn is followed by a small second wave (T) which occurs during the middle of systole (Fig. 3).

1. The short interval between the beginning of the R wave and the beginning of the rise in intraventricular pressure is interpreted by Kahn as due to the phenomena of conduction within the heart. In experimental ventricular extrasystoles the electric and mechanical changes are absolutely synchronous.

The most recent investigations of Kahn in Hering's laboratory indicate that the electrical variations and the mechanical action are synchronous, and that the electrical variations do not precede the contractions as was first supposed, although the former slightly precede the rises in intra-atrial and intra-ventricular pressures. We have, however, used the term "activity" rather than contraction in the above descriptions, as this leaves the matter open pending confirmation of Kahn's work.

The mode of origin of the T wave is more obscure, as there is no separate contraction which corresponds to it, but the two ventricular waves (R and T) correspond closely to the first and second waves of the diphasic variation which is seen in the contraction of any

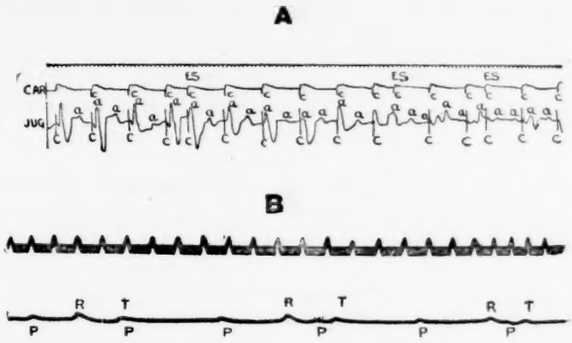

Fig. 5.—A, venous and carotid arterial pulse from a patient with complete heart-block and pulse-rate of 33 per minute. B, electrocardiogram from the same patient. Upper line, timer in fifths of seconds, lower line, electrocardiogram. The rate of the atria is about twice that of the ventricles but the complete dissociation between the two is more readily discernible in the electrocardiogram than in the venous tracing.

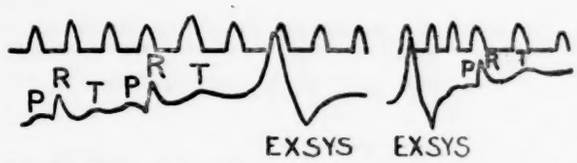

Fig. 6.—Electrocardiogram showing extrasystoles which probably arise in the right ventricle. Upper and lower lines as before.

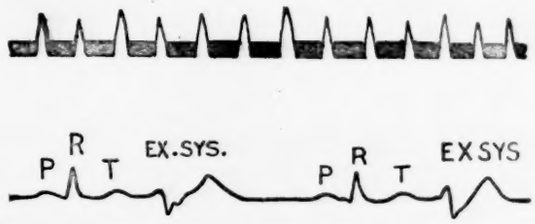

Fig. 7.—Electrocardiogram showing extrasystoles which probably arise in the left ventricle. Upper and lower lines as before.

muscle whatever. Moreover, the form of the electrical curve is scarcely due to the algebraic sum of the curves of the two ventricular contractions, as claimed by Kraus and Nikolai, since the same curve was obtained by Sanderson and Page and, more recently, by Gotch in the frog and tortoise, although these animals have only one ventricle (Fig. 3.)

So much for the normal electrocardiogram. When the left ventricle is hypertrophied, the electrocardiogram undergoes a very definite change, and the first ventricular wave (R) becomes inverted (Fig. 4). Occasionally the T wave is inverted also.

The electrocardiogram is also particularly useful in the diagnosis of heart-block. Figure 5A shows a venous

and arterial tracing from a case of permanent, complete heart-block with the auricular rate about twice the ventricular. Figure 5B is an electrocardiogram of the same case, in which, as will be seen, the complete dissociation is much more easily made out.

One of the most interesting variations is that which is obtained from the extrasystoles, as is seen in Figure 6. It will be noticed that the wave accompanying the extrasystole is unusually large and slow. It is so different from the normal beats which precede and follow it that one can tell by merely watching the string just when an extrasystole takes place. It will be noticed that the first wave is very large, that it subsides very slowly and is followed by a very large depression (Fig. 6). Kraus

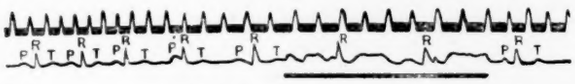

Fig. 8.—Electrocardiogram showing fibrillation of the auricles in the portion underlined. Upper and lower curves as before.

and Nikolai have shown that this type of curve is given by extrasystoles which arise in the right ventricle, whereas if the extrasystole arises in the left ventricle one obtains the exact inverse of this curve (Fig. 7). Recent investigations by Kahn have shown that stimuli which arise near the apex give about the same form of curve in either ventricle, in whichever ventricle they may arise. These types are not absolutely distinctive.

If the extrasystole arises in the atria, the curve is preceded by a P wave, and it often resembles the normal electrocardiogram much more closely.

Occasionally one encounters cases in which the P wave due to the atrial activity has disappeared, and is replaced by irregular waves of a frequency varying from 300 to 900 beats per minute (Fig. 8). As Rothberger and Winterberg and, more recently, T. Lewis have shown, this form of curve is associated with fibrillary

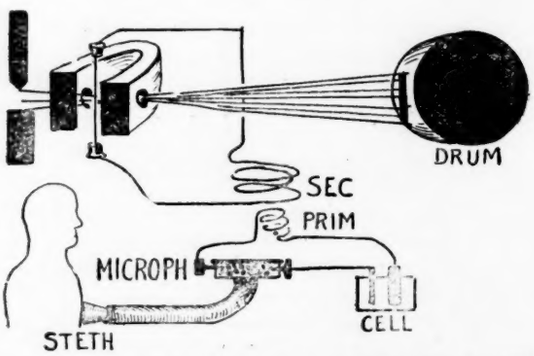

Fig. 9.—Scheme of simplified arrangement for the recording of the heart sounds. *Steth*, stethoscope; *Microph*, microphone; *Prim*, primary coil; *Sec*, secondary coil.

contractions of the atria, and is especially frequent in the permanent, absolute arrhythmia. This curve is obtained most frequently when the current is led off from the third right interpace and left interscapular regions—that is, when the circuit passes through both atria. Our own curve is obtained from the second derivation in the same patient as the left-sided ventricular extrasystoles, a patient with paroxysmal tachycardia between attacks.

Evidences of atrial fibrillation cannot be obtained with venous pulse, as the fibrillating auricle does not give any wave on it; and so the only evidences of this state can be revealed by the electrocardiogram. The studies of Cushny and Edmunds, of Hirschfelder, of Rothberger and Winterberg, and of Thomas Lewis indicate that this may open up an entirely new field in our knowledge of the permanent irregularities of the heart and of paroxysmal tachycardia, and in the study of many functional disturbances which are at present quite mysterious.

It seems probable, therefore, that this new method will enable us to penetrate one step further into the

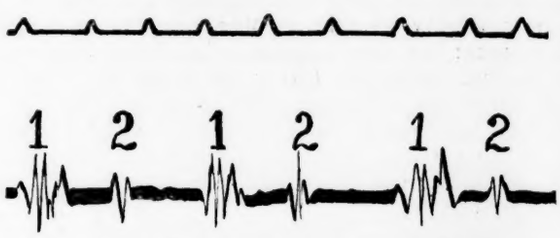

Fig. 10.—Graphic records of the heart sounds from a normal individual. Upper line, timer in fifths of seconds; lower line, phonogram.

problems which cannot be solved by the older procedures, and will bring us closer to a perfect understanding of what goes on in the diseased heart.

It is also possible to obtain graphic records of the heart-sounds by means of Einthoven's galvanometer. This procedure has nothing to do with the electrocardiogram and there is no direct connection between the galvanometer and the patient's body. The galvanometer is merely connected in circuit with the secondary coil of a very delicate telephone, or rather a microphone, so that it takes the place of the telephone receiver.

A stethoscope is held on the patient's chest and the heart-sounds are led to the microphone through a rubber tube. The sound waves cause telephone currents which are transmitted to the galvanometer and cause the string to vibrate. The vibrations of the string are photographed and graphic records of the heart-sounds are thus obtained (Fig. 9).

Figure 10 shows such records of normal heart sounds. It will be noticed that vibrations of the first sound last only about 8/100 to 1/10 second. The short pause is about 15/100 to 25/10 and the second sound lasts 5/100 to 8/100; while there is a long pause in diastole.

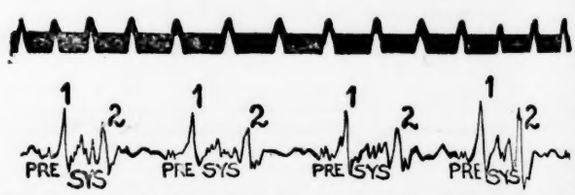

Fig. 11.—Graphic record of heart sounds from a patient with mitral stenosis and insufficiency. *Pre*, presystolic rumble; *Sys*, systolic murmur. Upper and lower lines as in Figure 10.

Figure 11 shows a record from a little girl with a presystolic rumble and a systolic murmur at the apex. The small vibrations correspond to the rumble just before the first sound, and the large vibrations correspond to the heart sounds.

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ABSTRACT OF DISCUSSION

DR. J. A. LICHTY, Pittsburg, Pa.: I should like some information regarding the lettering of these waves; have the letters used any significance? I should like to know more, too, regarding the A-wave in particular; the A-wave is always mentioned and looked for, and I should like to know if the

lettering of the A-wave is an arbitrary lettering, or if it possesses some special significance.

DR. JOHN H. MUSSER, Philadelphia: I should like to call attention to the importance of all these studies, not only the studies with the apparatus which has just been presented, but also the studies with the ordinary Jacquet instrument by which it is made possible to differentiate the various myogenic functions of the heart. This is very important in diagnosis and prognosis. It has also occurred to me that we can draw excellent conclusions as to methods of treatment. When we find in one man that there is an excess of stimulus production or of excitability, a depression of conductivity or contractility or a loss of tonicity, when coupled with certain blood-pressure changes, we have a guide at once for methods of treatment that is not based on empirical grounds, but is actually scientific. In the discussion on the question of heart failure and the reports of the various investigations concerning it, I had in mind to call attention to the value of morphin as a remedy in the earlier periods of heart failure, for two reasons. First, we realize, of course, that in the prevention of heart failure we should take into consideration the fact that there is a failure as well occurring in other portions of the organism, and particularly the nervous system. One of the first indications of heart failure perhaps is undue excitability or excess of stimulus production. Second, there is the immediate action of morphin on the heart. If we can uplift the condition of the nervous system, or reduce its wear and tear, both of which may be factors in the production of cardiac failure, by the use of a remedy such as morphin, we are going a long way in the prevention of cardiac exhaustion. I think therefore that morphin is a valuable aid directly and indirectly: directly by its action in lessening excitability or perhaps stimulus production; indirectly, through the nervous system. Other remedies or measures may be employed to control these disturbed myogenic functions. Furthermore, when we find that there is depression of conductivity, the remedy to be employed—atropin or belladonna—and other remedies come to our minds at once. For the depression of contractility the nitrites, among many other remedies, are necessary, and in loss of tonicity, digitalis and other heart tonics are of avail. In differentiating the remedies required, the degree of tension of the vessels is a valuable aid. I have been at sea recently and frequently in regard to the employment of remedies for the complicating conditions present in cardiac exhaustion. I have had great satisfaction resulting from studies such as these in determining the lines of treatment, and for this reason I wish to call attention to the importance of observations which help us in this matter.

DR. RICHARD WEIL, New York: I think it would be of interest to analyze the evidence offered by this new method with reference to the question of nodal rhythm. It seems impossible to determine definitely by the older sphygmographic method whether the coincidence of the jugular and the radial impulses was due to synchronous contractions of the auricle and ventricle—the nodal rhythm theory—or whether it was due simply to the propagation of the systolic ventricular impulse through the paralyzed auricle into the jugular. I should like to know whether the galvanometer method has in such cases determined the presence or absence of a true auricular contraction.

DR. A. D. HIRSCHFELDER, Baltimore: The A-wave is so called because the wave is caused by the auricular contraction. The letters P, Q, R, S and T of the electrocardiogram are purely arbitrary, but the P-wave is probably so named because it is a presystolic wave. I know of no significance of the lettering of the other waves, except possibly the letters of the alphabet following the P were used for the sake of convenience. P was selected first because it was the first letter of presystolic.

I agree with Dr. Musser that the most important thing for us at present is carefully and with accuracy to analyze the possible effects drugs are having or are producing, studying the maximal and the minimal blood-pressures, the venous pressures, the electrocardiograms, and also any changes in the cardiac outline. We should study the changes in force and the venous blood-pressure, the tendencies to overfilling of the heart, the changes in the tonus of the heart muscle (*i. e.*, the tendency of the heart to resist overfilling), and we should study as well the electrical changes which accompany changes in the cardiac impulses.

Many of the venous tracings, especially those having to do with the wave due to synchronous contraction of the auricle and ventricle, admit of doubtful interpretation. Some of the waves which appear during ventricular systole coincide with the C-wave and appear to be due to a fling of the lever. The electrocardiograms taken so far have not shown any evidences of nodal rhythm. Experiments with animals show simultaneous contractions of auricle and ventricle. On the frog's heart we can show contractions of the muscle ring that corresponds to the His bundle. The muscle ring can be seen contracting. When an abnormal stimulus acts first on this ring it contracts first and the auricular and ventricular contractions follow directly the contraction of the ring. The auricle and ventricle then contract simultaneously. However, this does not prove that a similar phenomenon occurs in all the cases which MacKenzie has ascribed to it in man. This whole subject is a matter for further careful investigation.

RACHITIS*

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CHICAGO

Rachitis is a dystrophy with which the pediatrician comes into contact with a frequency which breeds contempt; on the other hand there are a certain number of physicians to whom the condition of rachitis is sufficient explanation for any and all pathologic conditions. To what may be attributed this great variation of opinion among medical men? It is undoubtedly due to the fact that there is no definite limitation in the symptomatology of this condition. The definition of rachitis as set down in most of the text-books is the following:

Rachitis is a condition of malnutrition affecting all structures and systems of the body with characteristic defects of nutrition, chiefly manifested in the bones. It is this last phrase of the definition that has caused the many errors in the use of the name. Rachitis is a dystrophy, therefore a constitutional disorder, and though the chief macroscopic and known microscopic changes do affect the bones, there are other changes which are as constant as those of bone growth. With the name "rachitis" there is indelibly associated this so-called softening of the bones, and it follows that many are apt to rely on these changes only as the basis for diagnosis of the condition. It is because of this apparent diversity in the writings of pediatricians that this subject is brought to the attention of this Section, so that the use of the term may be confined to a certain definite symptom-complex.

ETIOLOGY

In no other pathologic condition are there so many theories as to the causative factors as in rachitis. While in the main there is a degree of uniformity, there are many theories of many authors which as yet are both unproved and not disproved. It is not within the province of this paper to go into the myriad of theories or into the various factors that seemingly favor the development of rachitis. Rachitis is a diet disease; to this statement most authors will subscribe. The dietetic errors which have received the greatest emphasis have been the arrangement of the percentages in the various constitu-

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

ents of the foods; to this I cannot subscribe. Admitting that it is possible to develop this condition in the lower animals when fed on various foods, the important point is that by feeding on such mixtures there is certain to be developed a disorder of digestion; and it is this factor which is the important etiologic element in this dystrophy. While it is a daily occurrence to see rachitic infants which have been fed on any of the mixtures that are emphasized as causes for rachitis, on the other hand it is a too common experience to find this dystrophy present in infants which are being given a breast-milk in which all our present-day knowledge in milk analysis can show no shortcoming; hence the constitutional idiosyncrasy of the baby is made to serve as the excuse. It is admitted that there are many contributing factors in these cases the importance of which have not been fully interpreted.

The various contributing causes embraced within the term "malnutrition" are no doubt of vast importance but the point which should be emphasized is that many cases show this or that contributing cause, yet in each and every case there is found an indigestion.

Rachitis is a dystrophy occurring usually between the sixth and thirtieth month, and in a few exceptional cases prior to this period. It is a condition for which the advice of the physician is not sought *per se*. These cases of persistent indigestion will, when occurring at an earlier period, develop the marantic type of dystrophy and in a large percentage of the cases terminate in the dystrophy known as infantile atrophy. There is still another age in which there is apt to occur a dystrophy with characteristic symptomatology, *i. e.*, chlorosis.

CLINICAL HISTORY

The usual clinical history of rachitis is that the child is restless and more or less fretful, the sleep is disturbed, the child shows a tendency to throw off the coverings, there is a slight rise of temperature, especially at night; with this there is the tendency to profuse perspiration about the head and face. When the child is picked up after a sleep it is noticed that the pillow is wet and the perspiration stands in beads on the forehead. Hand in hand with this there is a general tenderness; this tenderness may not manifest itself in the milder type of cases. The child repels advances, manifesting a desire to be let alone. If a careful inquiry is made, it is found that the child has had some disturbance of digestion. There is flatulence, frequently large foul-smelling bowel movements, with either diarrhea or constipation.

This indigestion is always present. The reason that more stress has not been laid on it is that the disorder is not a summer disorder but is met more frequently in the other seasons. The summer diarrheas frequently usher in an attack, but as these attacks of indigestion in the summer are of a more acute type the advice of a physician is sought early and the dietetic disorder is immediately remedied, while the low-grade digestive disturbances of the colder weather are allowed to go on untreated for an indefinite period.

This group of symptoms antedates any bone changes that are demonstrable clinically, but soon the beading of the ribs and the horizontal depression just below the nipple line may be noted; later on the wrists, knees, and ankles enlarge. The enlargements of the ends of the long bones follow certain definite rules and it is found that such bones as are active during their active growth show the greater deformity. The shape of the head is often characteristic. The bones become flattened and the general appearance is that the head is large but does not simulate the hydrocephalic head, in which there is bulging rather than flattening. The bony prominences are thickened. The head shows other characteristics—the veins on the forehead stand out prominently; the fontanel bulges and is unduly open; the frontal suture in cases occurring early is open.

Craniotabes is not a frequent accompaniment of rachitis but is found in enough cases to call for special mention. Craniotabes is that condition found in the posteroparietal region by which under moderate pressure of the fingers the bones cave inward with a feeling like that of stiff parchment. The question as to the significance of craniotabes is still a mooted point, and many still hold that it is rather associated with syphilis than with rachitis, but that it does occur in cases of simple rachitis there is little doubt. Craniotabes is quite frequently associated with laryngismus stridulus. The skull of a child affected with craniotabes shows shallow depressions at the diseased areas smoothly beveled off into the surrounding bone.

Changes occurring throughout the skeleton will be passed over, as they are too familiar to all to bear repetition.

Muscular Symptoms.—There is general muscular flabbiness and weakness. The patient may be fat and plump but the muscles feel lax and flabby. It is to this condition of the musculature that many of the deformities may be attributed, as kyphosis, scoliosis, knock-knee and talipes.

Nervous Symptoms.—Convulsions, tetany and laryngismus are more prone to occur in the rachitic. Tenderness, irritability, restless sleep, head rolling are common to the disorder and may be attributed to a nervous system rendered unduly irritable by the dystrophy.

Lymph-Glands.—These glands are usually palpable all over the body and in the prolonged and exaggerated cases the spleen is also enlarged.

Teeth.—Dentition may be delayed or irregular. The teeth are more apt to decay.

Blood.—The blood shows constant findings simulating chlorosis. This is especially true in the more severe types.

Complications.—In rachitis there is a tendency toward catarrhal disorders. All mucous membranes are prone to inflammation and many disorders of the upper respiratory tract, bronchitis and bronchopneumonia are encountered.

PATHOLOGY

In spite of innumerable opinions this question is still enveloped in a certain obscurity. The differences of opinion in regard to the causes of the disorder are reflected in a variety of opinions as to the manner in which they act. Identical conditions receive absolutely contradictory interpretations. Probably no organ or tissue of the body is exempt from changes due to this dystrophy, although the only changes which are demonstrable as caused by this condition are seen in the bones.

On examination of a long bone by making a longitudinal section of it and its adjacent cartilage, comparatively healthy bone is found on one side of the epiphysis, healthy cartilage on the other and between the two a layer, more or less thickened, of bluish translucent cartilage. The end of this bluish cartilage toward the healthy cartilage is regular, but the end toward the bone is very irregular—so much so in some cases that the cartilage appears within the bone as islands of cartilage. This

is the spongy tissue which has been considered by many as the characteristic lesion of rickets. The dimensions of the medullary are notably augmented. The modifications as revealed by histologic survey lie especially in the chondroid zone, which is manifestly thickened. At the juncture of this zone with the spongy bone there are numerous structures enveloped in a thin layer of embryonic tissue; the cartilaginous cells are proliferous; only their disposition in series is not regular and the intercellular substance which separates them is not distributed as in the normal bone. It is probable that concurrent disorders do affect the findings in many cases. For example, it is easy of demonstration that if a child passing through a mild attack of rachitis is subjected to an attack of one of the acute infectious disorders, there occurs an exacerbation in the enlargements at the ends of the long bones; so in cases coming to post-mortem from intercurrent diseases, it is not infrequent to find the specific bacteria of the acute disorder lodged in great numbers at points in proximity to the cartilage of the long bones. So it may be said that an intercurrent disorder may have special effect on bones which are undergoing rachitic changes.

The bones show a deficiency of inorganic material. In normal bone the greater portion consists of inorganic material, but in rachitis these proportions may be reversed. By reason of the changes mentioned the entire bone becomes light, spongy, and plastic, and greenstick fractures are prone to occur.

From the stimulation caused by the greater blood-supply, the enlargements at the ends of the long bones are most marked in the epiphyses subject to the greatest motion. From their constant motion in respiration the enlargements are first seen at the anterior ends of the ribs, the so-called rachitic rosary; these enlargements are greater at the fifth and sixth ribs by reason of greater range of movement. It is well to remember that these enlargements are always larger on the pleural side and may not be noticeable exterially. After the termination of the rachitis the normal bone development resumes and the newly formed bone becomes harder than the normal bone.

DIAGNOSIS

No disease of early life is so common as rachitis, nor is any disorder so frequently overlooked. It is far commoner for the diagnosis to be made after the cessation of the disorder when there remain but the results of a past rachitis than to have the diagnosis made during the attack.

Rachitis is a disorder insidious in its onset with a very definite symptom-complex described under "Clinical History." This clinical history occurs before any changes in the bones can be demonstrated clinically. There may be a persistence in any or all of these symptoms until the bone-changes appear; or any of them may subside. The chief object of this paper is to call attention to the misuse of the term "rachitis" as applied to the resultant deformities rather than to the disorder itself. The term "rachitis" should be applied only to the symptom-complex above described. The misuse of the term is now so general that in the use of the word it has become necessary to qualify it by a phrase indicating what phase of the disorder is under discussion. The term "acute rickets" is now of more or less general use but this is not applicable as the disease is an insidious disorder, running an indefinite course, and there is no definite disease which may be classified as chronic rickets. At just what point in the disorder it can be said that the rachitis has terminated and that there remains but the results of the rachitis may often be a debatable point, but it is obvious that in many cases of so-called rachitis the disorder has long since been overcome. That this point is well taken is evidenced by the fact that many of the history cards used by the various health authorities in the examination of the school child have this question: Has the child rickets?

It may be set down dogmatically that rachitis is a dystrophy, usually occurring between the sixth and thirtieth months, the symptoms of which are digestive disturbance, restlessness, profuse sweating, especially about the head and face, in severe cases general tenderness; and with these there occur manifold changes in the various systems of the body, with most marked macroscopic and known microscopic changes on the bones.

Of the mistakes in diagnosis most frequently made one is failure to recognize inflammatory and sanguinous effusions beneath the periosteum for simple rickets. This undoubtedly brought the term "acute rickets" into use. Another is mistaking the bone changes of congenital syphilis for those of rickets and a third considering the pseudoparalysis of rickets essential paralysis. Infantile scurvy may complicate rickets, and some authors have a classification including scurvy-rickets; but the disorders should never be confounded, as each has its distinct clinical picture.

PROGNOSIS

Children rarely die of rickets *per se*. It is usually some concomitant or intercurrent disorder that terminates life. Of these the pulmonopathies find in the rachitic child most favorable conditions, and, if survived leave the patient with permanently damaged chest and respiratory organs which may eventually terminate in an invasion of tuberculosis.

Patients with marked splenic enlargement and profound anemia may become marantic with a grave prognosis. Convulsions cause death in a large number of these cases. Laryngismus stridulus appears as a causative factor in many of the fatal cases but it is impossible to say to what extent the rachitis may be held responsible.

The active rachitic process usually ceases by the end of the second year, the length of the disorder depending largely on the ability to remove the indigestion and give an appropriate diet. In many cases the rachitis appears to develop with the advent of an improvement in diet and a clearing up of the digestive disturbance; this can easily be explained by the fact that at the beginning of the treatment of the digestive system the patient was in a condition of athrepsia and with the better hygiene the dystrophy took on a lower grade of malnutrition, namely rachitis. This form of the disorder is usually transient, lasting but a few weeks.

TREATMENT

From the above it is readily seen that rachitis is a preventable disease. The diet is of the first importance. In breast-fed children it becomes necessary to influence the mother in such manner as to make her milk suitable for the child. In many of the cases it becomes necessary to supplement the breast by suitable artificial foods. As the lack of fats has so long been emphasized as a causative factor there is danger of putting too much stress on this phase of the diet and of undoing good efforts by adding more fat than can be handled with

advantage by the child. Good hygiene with plenty of fresh air is a prerequisite. No diet can be set down that can be recommended in these cases. As a general rule cow's milk should be given, but as these cases occur in children fed on the starchy foods it must be remembered that the stomach will need much education in the digestion of this food and the initial use of milk must be in very attenuated doses. Expressed beef juice, raw eggs, orange and lemon juice all have a place in the dietary.

The use of drugs should be limited to the needs of the individual. Syrup of the iodid of iron is frequently indicated. For the digestive weakness the addition of malt or of molasses gives very favorable results. In clinical use the addition of a considerable amount of New Orleans molasses has the same effect as an extract of malt. The intercurrent disorders should be given appropriate treatment.

The tendency to deformities, such as bow-legs, knock-knee and spinal curvatures, must be borne in mind and precautionary steps be taken by preventing undue strain on these parts. In regard to remedying these deformities, it is well to remember that they are very common in childhood and rare in adult life. The tendency of Nature is toward repair.

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ETIOLOGY, DIAGNOSIS AND TREATMENT OF COLONIC, SIGMOIDAL, RECTAL AND ANAL AFFECTIONS IN INFANTS AND CHILDREN UNDER TWELVE YEARS OF AGE

INCLUDING REPORT OF THREE HUNDRED AND SIXTY-NINE CASES

WITH A DESCRIPTION OF A METHOD OF CECOSTOMY WHICH PROVIDES A MEANS OF IRRIGATING THE LARGE AND SMALL INTESTINE SEPARATELY OR AT THE SAME TIME *

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A fairly large experience in the treatment of colonic and anorectal affections has convinced me that the discomfort and pain from which infants and children suffer is to be found in these localities much more frequently than is suspected by the internist, pediatrist or surgeon. When an adult suffers from a colonic or rectal ailment he is usually advised to have it treated or operated on just as soon as its nature has been determined, but this rule is not always followed when an infant or child becomes so afflicted. In many instances pathologic conditions of the colon and rectum go unrecognized; in others they are considered of minor importance, and in still others, even when serious and after diagnosis, the physician not infrequently does nothing but advise the mother to let the child alone, telling her that it will outgrow the trouble.

Now and then a case of abdominal disease is encountered in which a diagnosis cannot be made, except by exclusion. Usually, however, the nature of the intestinal lesion can be determined by palpation, percussion, succussion, the *x*-ray, or by inflating or distending the colon with air, fluid or a bismuth solution, after first obtaining a complete history. There is no reason, however, why diseases of the rectum should not be accurately diagnosed by the physician who has perfected himself in modern methods of examination.

Most rectal ailments are located in the lower inch and a half of the rectum; consequently they can be identified by inspecting and palpating the anus and surrounding parts and by making a careful digital and anoscopic examination; but when the disease is in the middle and upper rectum, at the rectosigmoidal juncture or lower sigmoid flexure, it can be seen only through the proctoscope or sigmoidoscope.

In many quarters the opinion prevails that a digital and proctoscopic examination is impossible in very young children. Such, however, is not the case, since the sphincter can be made to relax and the rectum is sufficiently large to admit the finger or a small proctoscope.

I have treated many young people and adults for very extensive procidentia recti, invagination, mechanical constipation, colitis, stricture, abscess, fistula and other serious diseases of the lower bowel who had suffered since infancy or childhood, affections which could have been speedily cured had they been correctly diagnosed and treated in their incipiency. It would seem that the time has now arrived when physicians should take on themselves the responsibility of treating the anorectal affections of children as soon as diagnosed and no longer permit them to drift, as has been customary, with the hope that they will outgrow the lesion if it does not heal spontaneously.

The treatment in this class of cases does not necessarily mean an operation, for, in many instances, a cure can be effected by regulating the stools, keeping the bowel in a hygienic condition and by making topical applications. When surgical intervention is necessary it should cause no anxiety, because in the vast majority of instances the operation will be devoid of danger, can be quickly performed, postoperative suffering is slight and convalescence is short.

Instead of discussing at length the etiology, symptoms, diagnosis and treatment of the various colonic and anorectal diseases of infants and children twelve years of age or less, I have subdivided and tabulated my work in this field, which includes 368 cases, to show the large variety of affections encountered in these regions and the results which followed their treatment. Three tables with their summaries have been compiled; the first includes the cases of rectal diseases, the second those of anorectal obstipation and the third those of abdominal obstipation. After calling attention to the salient features of these tables and outlining the treatment of the various diseases, I shall describe my method of cecostomy which permits the small and large intestine to be irrigated separately or at the same time, a reliable procedure to employ in all cases where direct bowel treatment is indicated.

Remarks.—The age of these patients varied from birth to 12 years of age; the majority were more than 6 years old. None of the five deaths recorded is chargeable solely to the treatment instituted, because they occurred in infants afflicted with acute congenital bowel obstruction (2), cancer (2) and diphtheritic colitis (1), and the patients were moribund or in a deplorable condition when first seen.

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TREATMENT OF ANORECTAL AFFECTIONS

The majority of operations performed in this series of cases required less than ten minutes, and local anesthesia induced by sterile water, normal saline or a 0.125 per cent. eucain solution was employed more frequently than general narcosis, and the treatment of the different affections was in the main as outlined below.

Fissure in Ano.—Recent fissures were cured by securing daily semisolid movements and by cleansing and placing a small gauze pledget previously saturated in ichthyol or a silver nitrate solution in the rent for the purposes of drainage and stimulation. Palliative measures are of little avail in the treatment of old fissures accompanied by sphincteralgia because they do not put the muscle at rest. Divulsion of the muscle is sometimes effective, but I have discarded it in favor of division of the sphincter because the latter puts the sphincter at complete rest during the treatment and also serves to widen the anal canal and act as a prophylactic against future tears. My operation consists in anesthetizing the tissues posterior to the rent by injecting them with sterile water or a 0.125 per cent. eucain solution until white. The sphincter is then severed by scissors, one blade of which has been placed posterior to and the other in the rectum in front of the fissure, or with a bistoury.

Ulcers of the Anal Region.—Ulcers which incite sphincteric contraction are treated as fissures unless they are syphilitic, when anti-syphilitic remedies are added. Extensive ulcers in the middle and upper rectum are treated through the proctoscope with stimulating applications, the cautery or caustic. When they are numerous, superficial and scattered throughout the rectum, irrigation daily with a mild solution of ichthyol 1 per cent., permanganate of potash 1 per cent., or weak solutions of boric acid or silver nitrate. Carlsbad salts or krameria and soda work well, but when the ulcerated areas are chronic and deep, as indicated by frequent evacuations containing a large amount of pus, blood, mucus and other débris, stronger solutions are employed until there is improvement, and in addition a warm emulsion composed of olive oil, bismuth and iodoform is injected in small amounts at night for the purpose of allaying tenesmus and pain. In aggravated cases in which the colon and sigmoid are involved, and the above measures fail, appendicostomy or cecostimy is performed.

Procidentia Recti.—Where the mucous membrane only protrudes, a cure can sometimes be effected by (a) correcting a cough, diarrhea, constipation or other cause of straining; (b) securing semisolid movements; (c) having the child stool while in the recumbent posture; (d) injecting an alum, zinc or other astringent solution after each action, and (e) placing a pad of gauze over the anus and tightly strapping the buttocks.

When this treatment fails, I infiltrate the mucosa with water or a eucain solution at a number of points until glassy white welts are formed; these in turn are seized, pulled down, ligated and left to slough off as in hemorrhoidal operations. The procedure is nearly always successful because a sufficient exudate is thrown out to glue the mucous and muscular coats together, and shortening and narrowing of the rectum ensues as healing of the ulcerated areas takes place.

Where both the mucosa and muscularis protrude, I (a) remove a cuff of the mucous membrane, (b) fold and suture the muscular tunic on itself and (c) complete the operation by suturing the divided edges of the mucosa. In very extensive cases of procidentia complicated by invagination of the sigmoid flexure into the rectum, I proceed as follows: (a) the abdomen is opened, the bowel pulled up until taut and then anchored to the anterior parietes by my method of sigmoidopexy; (b) linear cauterization is made to the middle and upper rectum through the proctoscope, and finally (c) a diamond-shaped piece of tissue, including a part of the lower rectum, the sphincter and the postanal tissues, is removed to narrow the bowel, shorten the muscle and tighten the external parts about the rectum.

Polyps.—These, when located at or near the anus, are ligated and excised after having been anesthetized at their attachment. When situated higher up, where the mucosa is less sensitive, each in turn is exposed by the aid of the proctoscope, a Gant valve clamp is snapped on their pedicle and they are left to slough off. This method of removing polyps is admirable because it takes but a moment, is certain, causes no pain or bleeding and does not require ether. The older procedure of removing them by torsion is to be condemned because it is painful, extensively lacerates the mucosa and is frequently followed by copious bleeding and a lengthy convalescence.

In cases of long standing in which the growths are numerous, large, ulcerated and scattered throughout the colon or sigmoid flexure, nothing short of cecostomy and lavage or extirpation of the diseased bowel effects a cure.

Internal Hemorrhoids.—As will be seen by a glance at Table 1, internal hemorrhoids occur in infants and children almost as rarely as cancer. These tumors are painlessly removed in a moment by ligation after having been infiltrated with water or eucain.

Thrombotic Piles.—These are transfixed at their base with a curved bistoury, split open and packed with gauze, which arrests bleeding and acts as a drain to prevent their refilling.

Cutaneous Hemorrhoids.—These are snipped off with scissors and the wound is allowed to heal by granulation.

Stricture.—In cases in which the lumen of the intestine is diminished through swelling of the mucosa or exudates in and outside the rectal wall, the discomfort arising therefrom is lessened or completely overcome by regulating the stools, irrigating the bowel, making soothing and stimulating topical applications to the diseased intestine and by dilating the constricted bowel with the fingers or bougies.

Moderate cicatricial strictures are improved by divulsion gradually with bougies or forcibly with the fingers, but their division is preferable because more lasting results are obtained and the operation takes no longer. The technic consists in guiding a probe-pointed bistoury through the stricture and severing it and the sphincter posteriorly as it is withdrawn, and in packing the wound with gauze. Both divulsion and division are contraindicated when the stenosis is located above the peritoneal attachment, because peritonitis will surely follow rupture or perforation of the intestine.

There is but one cure for a scar stricture and that is complete extirpation, a procedure which entails some danger. Where there are multiple constrictions or a very long stricture and much perirectal thickening, extirpation will take considerable time, cause much shock and would likely prove fatal in young children, and for these reasons it is advisable to substitute colostomy for excision until the child has grown older and stronger, when the artificial anus may be closed and the stricture removed.

Congenital Deformities.—The treatment of imperforations of the rectum and anus in the newly born is varied according to the deformity. When the outlet is partially or completely blocked by a fold of skin or fibrous tissue, it is caught in forceps and removed with scissors; but when the anus is abnormally narrowed by connective tissue, it is split and the wound is drained and occasionally stretched as healing takes place. In cases of deformity in which the feces find a free exit through the vagina, bladder, buttock or elsewhere, operation is postponed until the child is older, but when the opening is small and there is danger from obstruction, it is enlarged or a temporary vent is formed in the interischial or inguinal region.

Imperforate Anus: If the cul-de-sac terminates low down and the sphincter is intact, the anus is formed at the usual location, but if the muscle is absent the anus is made further forward or backward according to indications. The operation is begun by an incision extending from the perineum in front to the coccyx behind, which splits the sphincter. The wound is deepened upward to the blind rectum, which, after being freed, is brought down and sutured to the anal skin, after which the sphincter and wound are sutured about it. The coccyx is removed when additional room is necessary, but the peritoneal cavity is not opened except when imperative, and is then closed before the bowel is anchored. When the intestine cannot be brought down to the perineum, it is sutured to the skin of the sacral or coccygeal regions. In all cases a fair-

sized rubber tube is left projecting from the rectum through which the meconium, gas and feces escape.

Imperforate Rectum: The anus may be normal and an obstruction may not be suspected until dangerous symptoms arise. In such cases, when the terminal extremity of the intestines is near the surface, it is incised, evacuated and washed out, but when the condition of the patient permits, the rectum is brought down and sutured to the anal region.

In distressing cases in which a part of the rectum is obliterated, it is freed and anchored at the most available point or a permanent artificial anus is established. When colostomy is performed, according to my intermuscular plan, the patient has fair control over the evacuations and often requires a laxative.

Sequelæ.—Sequelæ frequently need treatment to overcome constipation and prevent obstruction. Usually the trouble is caused by the small size of the original opening or a long narrow stricture which has formed where the intestine has retracted. In both conditions the lumen of the bowel is increased by incising and subsequently dilating it, or in cases where no previous attempt has been made to bring the cul-de-sac to the anus this is done if feasible. When neither of these procedures is possible a permanent artificial anus is formed.

Fistulas.—Fortunately in children fistulas are superficial, short, and of the complete variety and require but a slight operation under local anesthesia. The following are the steps in my operation for complete fistula: (a) enough of a 0.125 per cent. eucain solution is injected into the sphincter and tissues overlying the tract to form a white line, which indicates desensitization; (b) the lower blade of a Gant probe-pointed scissors is then introduced into the outer opening and made to travel along the sinus, which, together with the sphincter, is rapidly divided by a succession of cuts, and (c), after which the wound is packed with gauze.

Abscesses.—Irrespective of their extent and location, abscesses are freely incised, curetted, cleansed and drained to relieve pain and prevent burrowing of the pus.

Pruritus Ani.—This is more frequent in children than is suspected, and may be induced by local lesions which incite a discharge, worms and foreign substances which get caught in the anal, mucous or skin folds. When due to the former the condition causing the discharge is corrected, and when to the latter, frequent cleansing of the anus with plain or salt water will afford the necessary relief. In cases in which itching has existed for a considerable time and there is a chronic dermatitis, this is remedied by applying iodin or a nitrate of mercury ointment.

Impactions.—All these are treated alike, whether composed of feces, seeds or fruit-stones, but little or nothing is accomplished toward their dislodgment or expulsion by means of oils or cathartics internally administered. Recent fecal impactions are occasionally softened and evacuated by repeated enemas of warm water, oil or glycerin alone or in combination, but these measures have no effect on mucus-covered masses. Hydrogen peroxid in full strength when injected in liberal amounts has a decided tendency toward the breaking up of the fecal concretion into numerous smaller masses so that it can be washed out. Marked impactions, which cannot be dislodged by friction, massage and enemas, are removed by force. When low they are broken up or penetrated by the finger or handle of a spoon, but when high up in the rectum or sigmoid this is accomplished through the proctoscope with a gouge, after which the impactions are quickly evacuated by irrigation. Fecoliths which become encysted and cannot be dislodged by treatment instituted from below or by way of the mouth, are removed by enterotomy or an outlet is made above them.

Venereal Warts.—These are removed with scissors without anesthesia, or they are dried up with a mixture of equal parts of calomel and tannic acid.

Hypertrophied Anal Papillæ.—When causing pruritus and tenesmus they are snipped off under infiltration anesthesia.

Hypertrophy of the Anal Sphincter.—This condition, if inducing sphincteralgia and constipation, is quickly and successfully treated by dividing the muscle exactly as in fissure operations, and painful defecation resulting from an abnormally small anus is treated in a similar manner.

Hypertrophied Rectal Valves.—The valves are divided by placing Gant's valve clamps on them and allowing them to slough out.

Fecal Incontinence.—This condition following injuries or operations is improved either by narrowing the anus through cauterization and the production of scar tissue or by isolating and approximating the ends of the divided muscle.

TABLE 1.—ANORECTAL AFFECTIONS IN INFANTS AND CHILDREN

Diseases and Complications.	No. of Cases.	Sex — M.	Sex — F.	Cured.	Improved.	Unimproved.	Died.
Congenital deformities	10	6	4	8	..	..	2
Sequelæ following operations for deformities	9	5	4	3	5	1	..
Coccyx, tumors and cysts of	3	2	1	2	1	..	..
Coccyx, deviation of (anterior and posterior)	2	1	1	2	..	..	..
Coccyx, fracture of	2	2	..	2	..	..	..
Coccygodynia	1	..	1	1	..	..	..
Coccyx, congenital absence of	2	2	..	2	..	..	..
Dermoid, sacral	2	1	1	2	..	..	..
Cyst (sebaceous), anal	1	1	..	1	..	..	..
Lipoma of buttocks	2	1	1	2	..	..	..
Sarcoma of anus and buttocks	1	..	1	..	..	..	1
Carcinoma, rectal	1	1	..	..	..	..	1
Procidentia (mucosa only)	27	15	12	20	5	2	..
Procidentia (mucous and muscular coats)	7	3	4	6	1	..	..
Polyps (single)	15	6	9	15	..	..	..
Polyps (multiple)	6	4	2	4	1	1	..
Fissure (single 16, double 1)	17	8	9	17	..	..	..
Ulcers, non-specific (single 2, multiple 6)	8	4	4	8	..	..	..
Ulcers, syphilitic (congenital, of anus or vulva)	6	2	4	5	1	..	..
Ulcer, tuberculous	1	1	..	1	..	..	..
Ulcer, diphtheritic	1	..	1	..	..	..	1
Stricture (congenital syph. 1, foreign body 1, injury 1)	3	2	1	2	1	..	..
Chancroids, anal	1	..	1	1	..	..	..
Venereal warts (acuminata 1; lata, syph., 1)	2	..	..	2	2	..	..
Gonorrhea	5	2	3	5	..	..	..
Proctitis, acute	6	4	2	6	..	..	..
Proctitis, chronic	9	5	4	7	1	1	..
Erosions of anus and skin	7	3	4	7	..	..	..
Abscesses (ischiorectal 4, marginal 4, submucous 3)	11	7	4	10	1	..	..
Abscess, sacral (dermoid)	1	1	..	1	..	..	..
Fistula (complete 4, blind internal 3, blind external 1)	8	5	3	8	..	..	..
Fistula, rectovaginal	1	..	1	1	..	..	..
Fistula, tuberculous (local 1, with gen. tb. 1)	2	1	1	1	..	1	..
Hemorrhoids, external thrombotic	8	4	4	8	..	..	..
Hemorrhoids, external cutaneous	5	3	3	5	..	..	..
Hemorrhoids, internal (complicating constipation)	2	1	1	2	..	..	..
Impaction, fecal (rectal)	15	8	7	15	..	..	..
Impaction, from seeds and fruit-stones	5	4	1	5	..	..	..
Injuries (severe laceration of rectum and anus)	4	3	1	3	1	..	..
Foreign bodies (fish hooks, bones, coins, etc.)	4	4	..	4	..	..	..
Pruritus ani	3	1	2	2	1	..	..
Threadworms	3	2	1	3	..	..	..
Roundworms	2	1	1	2	..	..	..
Hypertrophied anal papillæ	1	1	..	1	..	..	..
Patulous anus (from pederasty)	1	1	..	..	1	..	..
Sphincters, anal and urinary (paralysis of)	3	2	1	..	1	2	..
Sphincter, hypertrophy of	11	6	5	11	..	..	..
Defecation, painful, from abnormally small anus	7	4	3	7	..	..	..
Defecation, difficult, from overlapping anal skin folds	3	2	1	2	1	..	..
Fecal incontinence (following operation)	2	1	1	..	1	1	..
Hypertrophy of the rectal valves	2	1	1	1	1	..	..
Rectocele, posterior	1	1	..	..	1	..	..
Bifurcated rectum	1	1	..	..	1	..	..
Total (53 affections)	263	146	117	223	28	9	5

SUMMARY OF TABLE 1

Different diseases treated	53
Number of patients treated	263
Males	146
Females	117
Number of patients cured	223
Number of patients improved	28
Number of patients unimproved	9
Number of deaths	5
Total	263
Number of venereal diseases treated	14
Congenital syphilis (M. 2, F. 4)	6
Chancroids (M. 0, F. 1)	1
Venereal warts (M. 0, F. 2)	2
Gonorrhea (M. 2, F. 3)	5
Total	14

TABLE 2.—ANORECTAL MECHANICAL CONSTIPATION (OBSTIPATION) IN INFANTS AND CHILDREN TWELVE YEARS OF AGE OR YOUNGER

Diseases and Complications.	No. of Cases.	Sex M.	Sex F.	Cured.	Improved.	Unimproved.	Died.
Fissure in ano	10	6	4	10	..	..	..
Ulceration, non-specific	4	2	2	3	1	..	..
Ulceration, congenital syphilitic	2	..	2	1	1	..	..
Stricture, congenital syphilitic	1	1	..	..	1	..	..
Stricture, traumatic (encysted chicken-bone)	1	1	..	1	..	..	..
Stricture from sloughing (extravasation of urine)	1	1	..	..	1	..	..
Congenital deformities (complete and incomplete occlusion)	10	6	4	8	..	..	2
Congenital deformities, operations following (sequelæ)	7	4	3	4	2	1	..
Coccyx, anterior deviation of	1	1	..	1	..	..	..
Coccyx, congenital absence of with anal opening at sacral termination	1	1	..	..	..	1	..
Coccyx, congenital absence of, causing posterior rectocele	1	..	1	..	1	..	..
Bifurcated rectum	1	1	..	..	1	..	..
Impaction from seeds and fruit-stones	5	4	1	5	..	..	..
Ascarides lumbricoides, impaction from	1	..	1	1	..	..	..
Foreign bodies	4	4	..	4	..	..	..
Polypi	4	3	1	3	1	..	..
Hypertrophy of anal papillæ	1	1	..	1	..	..	..
Hypertrophy of sphincter	11	6	5	11	..	..	..
Hypertrophy of rectal valves	2	1	1	1	1	..	..
Sarcoma	1	..	1	..	..	..	1
Carcinoma	1	1	..	..	..	..	1
Total (21 affections)	70	43	27	54	10	2	4

TABLE 3.—ABDOMINAL MECHANICAL CONSTIPATION (OBSTIPATION) UNDER TWELVE YEARS OF AGE

Diseases and Complications.	No. of Cases.	Sex M.	Sex F.	Cured.	Improved.	Unimproved.	Died.
Hirschsprung's disease	3	1	2	..	2	1	..
Dilatation of colon	8	5	3	..	5	3	..
Colonic ptosis	4	2	2	..	2	2	..
Invagination of sigmoid flexure into rectum	7	3	4	5	1	1	..
Adhesions following typhoid	2	1	1	1	1	..	..
Adhesions following localized peritonitis	1	..	1	1	..	..	..
Adhesions following appendectomy	1	1	..	..	1	..	..
Angulation sigmoid flexure (congenital)	1	1	..	1	..	..	..
Angulation hepatic flexure (cord binding to abdominal wall)	1	1	..	..	1	..	..
Volvulus, partial (chronic)	3	1	2	2	..	1	..
Enterospasm, chronic intermittent (foreign body in sigmoid)	1	1	..	1	..	..	..
Mesentery, abnormally long (twisting and adhesions)	1	1	..	..	1	..	..
Mesentery, abnormally short (angulation)	1	..	1	1	..	..	..
Hypertrophy of O'Beirne's sphincter	2	1	1	..	2	..	..
Total (14 affections)	36	19	17	12	16	8	0

COMBINED STATISTICS OF TABLES 2 AND 3

Anorectal mechanical constipation (obstipation)	70	43	27	54	10	2	4
Abdominal mechanical constipation (obstipation)	36	19	17	12	16	8	0
Total (35 affections)	106	62	44	66	26	10	4

My case of posterior proctocele was relieved by removing a section of the bowel and suturing the edges of the wound, and the bifurcated rectum was treated in the same way.

Foreign Bodies.—Small, smooth and sharp-pointed objects are removed with the finger or through the proctoscope with forceps, but when large or encysted, much annoyance is saved by splitting the sphincter muscle under eucanization so that they can be quickly removed without pain.

Diseases, Injuries and Deformities of the Coccyx.—When the coccyx is displaced, fractured or inflamed and causes discomfort or painful defecation, its removal is indicated. The steps in my method of coccygeal excision consist in the following: (a) the tissues are folded between the thumb and fingers and divided transversely and down to the tip of the coccyx with one cut of the scissors; (b) a Gant coccygeal elevator is hooked in the bone and it is lifted upward, freed and removed by four cuts made at the sides, beneath and transversely through the base of the coccyx; and (c) finally the wound is closed with interrupted sutures. This procedure is superior to the older excision operation because it requires but three minutes, is practically bloodless, primary union is obtained and the only paraphernalia required are strong, blunt-pointed scissors, a needle and a piece of catgut. The success of the operation is due to the fact that the cuts are made without injury to the blood vessels, since the scissors point upward, outward and away from the rectal vessels at all times.

Sacrococcygeal Cysts and Tumors.—These require skilful handling, and routine treatment is impossible because of their variable size, composition, method of attachment and the fact that they may contain fluid, sebaceous matter, hair, or supernumerary limbs. They have been treated with phenol and iodin injections, and with the cautery, but without success. Tapping and their partial removal has given temporary relief, but when feasible the tumor or cyst is carefully dissected out and the wound drained and closed.

Sacral Dermoids.—Indicated by a dimple or moisture over the bone, sacral dermoids are operated on by infiltrating their overlying tissues with eucain or water, removing the sac and draining the wound.

Malignant Growths (Sarcoma and Carcinoma).—Malignant growths require a difficult and prolonged operation and in children recur quickly after extirpation; for these reasons the little patients should be made comfortable by palliative measures and not be subjected to operation except in very favorable cases.

From what has been said it may be correctly inferred that rectal diseases, with the exception of cancer and congenital deformities of the bowel, are readily curable, and further, that the treatment required is simple, devoid of danger, leaves few sequelæ and causes little suffering. If such good results are so easily obtained, has not the time arrived when the family physician and pediatrist should prepare for and treat this class of affections in a more satisfactory manner than has heretofore been done? Should they do this, I believe that much unnecessary discomfort and pain could be saved to infants and children and that many of the serious bowel affections now encountered in adults could be prevented.

COMMENTS ON TABLES TWO AND THREE (OBSTIPATION)

I wish now to direct attention to some statistics relating to mechanical constipation, a condition which is often congenital, or acquired early in life, owing to the anatomic arrangement of the bowel in infancy and early childhood (Tables 2 and 3). In Table 2 are tabulated the cases of anorectal, and in Table 3 those of abdominal obstipation.

In studying these statistics of 106 cases of obstipation, it is interesting to note the large number (35) and widely varying conditions which have entered into its causation.

In nearly all the cases of anorectal obstipation the patients were cured or very greatly benefited; in only two instances was there no improvement, and only four deaths occurred in the seventy cases. The results obtained are no better than one would expect because of the simple nature of the rectal ailments causing the trouble and their easy curability. Of the four deaths, two were due to cancer and the others to acute obstruction from congenital deformities, and all four patients were beyond saving when seen.

Fourteen different lesions were found to account for the thirty-six cases of abdominal obstipation and the results in this series show that twelve patients were cured, sixteen improved and eight not benefited. The results obtained were very good, but not so flattering as those following the treatment of rectal obstipation, but this is not to be wondered at, because the lesions were more serious and laparotomy was necessary.

About one-half of the constipated infants and children examined suffered from mechanical obstructions of one kind or another. This appears to be a startling statement to make, since habitual constipation is usually thought to be the most common type of costiveness, but it must be remembered that my work is largely surgical and for a number of years I have taken a great interest in the treatment of surgical constipation and have written much on this topic. This would naturally lead to my getting a considerable number of these cases, whereas the internist would get the atonic type. My experience, however, warrants the belief that the cause of constipation is of a mechanical nature very much more frequently than physicians and surgeons at present recognize, and occurs in about 25 per cent. of the cases.

TREATMENT OF MECHANICAL CONSTIPATION (OBSTIPATION)

The therapeutic measures, medical and physical, employed to relieve and cure ordinary or atonic constipation are, as a rule, unreliable in obstipation, because here we have a surgical disease, and nothing short of an operation will permanently correct or remove the impediment to the fecal current.

I have elsewhere[1] fully described the surgical procedures indicated in the treatment of the various forms of mechanical constipation and need not do more here than to state how the operations are performed without giving their steps.

Dilatation of the Colon and Hirschsprung's Disease.—These are corrected in the very young by scarifying and plicating the colon and sigmoid flexure longitudinally to narrow the bowel, after which it is sutured to the anterior abdominal wall at one or more points to overcome ptosis; but when there are other complications, or the bowel is paralytic, I make it a practice to sever the ileum near the cecum, close the divided ends and anastomose the proximal extremity with the sigmoid flexure or rectum (ileosigmoidostomy, ileorectostomy). In older children, who can withstand a capital operation, in whom the intestine is enormous in size, its walls thin and the propulsive power destroyed, the ileum is joined to the sigmoid flexure or the colon is resected or excised.

Colonic Ptosis and Invagination of the Sigmoid Flexure.—These conditions are easily corrected in most instances without danger by scarifying the abnormal portion of bowel, lifting it upward and anchoring it to the anterior parietes at as many places as required by suspensory sutures tied across rubber tubings.

Adhesions.—These are dealt with according to their character. When a segment of intestine is glued to another piece of intestine or organ by exudates, separation is accomplished by wiping the intestine loose with gauze. When it is attached by fibrous bands, they are divided with scissors, but when the adhesions are extensive the bowel is carefully freed by dissection while in view, after which raw surfaces are covered with peritoneum.

Angulations and Twists (Volvulus).—Angulations and twists of the colon are straightened out by dividing adhesions, the abnormal mesentery or other structure which pulls on the bowel, or when induced by a misplaced organ or tumor, the former is replaced and the latter is removed.

Enterospasm.—When caused by impacted seeds, fruit-stones or a foreign body, enterospasm is often relieved by catharsis, belladonna, hot fomentations and enemas, but when these measures fail the offending object is removed through an opening made in the intestine.

Narrowing of the Bowel.—Narrowing, resulting from a hypertrophied O'Beirne's sphincter or stricture, is sometimes relieved by dieting, irrigation and medication, when the cause is inflammatory or ulcerative, but when the obstruction is due to cicatrization, divulsion or excision of the stricture is practiced.

DIRECT BOWEL TREATMENT WITH DESCRIPTION OF A NEW ENTERO-COLONIC IRRIGATION

Up to the present physicians know that better results are obtained in the treatment of inflammatory, ulcerative, parasitic and other bowel affections when medication is carried directly to the lesions than when it is made to reach them indirectly, as when given by mouth.

Enteroclysis and irrigation may be accomplished from below through the anus or from above through an opening made in the intestine, and however done it will prove successful provided all the lesions are reached. Treatment from below would be ideal if this could be satisfactorily accomplished, because the patient could remain at home and not be subjected to operation. But unfortunately it cannot be so done, because of the difficulty frequently encountered in passing the tube sufficiently high to carry the fluid to all parts of the diseased intestine.

Appendicostomy, cecostomy and my operation, which provides a way of irrigating both the small and large intestine, were originated with the object of procuring a means of through and through irrigation.

Appendicostomy, once so popular, is fast falling into disrepute, because the appendix is frequently bound down by adhesions, blocked, strictured, too short, or diseased, which makes it unfit for irrigating purposes; it sloughs off, or its opening closes. When appendicostomy is practiced, the appendix should be opened and a Gant appendiceal irrigator introduced during the operation so that irrigation can be started immediately.

Ordinary cecostomy may be employed when the disease is limited to the colon, but is not effective when the small intestine is involved.

I believe that the method of cecostomy with a provision for small and large bowel irrigation as described below is superior to other operations devised for the purpose of carrying the treatment directly to the bowel, because it is applicable in the treatment of lesions located in the small intestine, the large bowel or both. The operation is simple, devoid of danger, requires but a few minutes, and provides a certain means by which the physician, intern or nurse can irrigate all parts of the bowel immediately or later according to indications. Concisely described, the steps in Gant's cecostomy are as follows:

1. Through an incision made over it the cecum is brought into the wound and three purse-string sutures are introduced

1. Gant: Constipation and Abdominal Obstruction, 1909.

into its outer surface opposite the ileocecal valve and the intestine opened within the suture line.

2. The Gant metal, or preferably rubber, enterocolonic irrigator, is now pushed across the cecum and guided through the ileocecal valve into the small intestine by means of the thumb and fingers of the left hand and is held there by an assistant until the infolding purse-string sutures are tied and a circular cone-shaped valve is formed around the tube.

3. The cecum is scarified and two suspensory sutures are introduced at the sides of the irrigator and then carried through the abdominal wall by means of a long-handled needle, where they are tied across rubber tubings.

4. After the wound has been closed by the layer method the metal irrigator is retained in position by attached pieces of tape which encircle the body, but when the rubber tube is used it is fastened in the same way, or to the skin by an adhesive strip after the irrigating tubes have been closed with cravat clamps.

5. The dressings, including an outer covering of rubber tissue, are now applied after having been split to allow the irrigator to project through them.

COMMENTS ON AND INDICATIONS FOR GANT'S CECOSTOMY

I have employed this operation since January, 1906, and published it with indications Aug. 15, 1908,[2] but since then slight improvements have been made in the technic.

I have performed the operation twenty-two times on adults in the direct treatment of inflammatory, ulcerative, parasitic, specific and other affections involving all parts of the intestine, and the results following this procedure have been most flattering.

It has been performed but three times on children under 12 years of age. In all instances good results were obtained, and from this experience with the operation I am convinced that it has a wide field of usefulness in the treatment of intestinal affections in infants, children and adults, and that it should take precedence over enterostomy, colostomy, appendicostomy and ordinary cecostomy in this class of cases.

In a paper read before the Medical Association of Greater New York, April 20, 1908, and since, I have maintained that cecostomy is indicated in the treatment of enteritis, enterocolitis and catarrhal, tuberculous, dysenteric, syphilitic and gonorrheal colitis, ptomain poisoning, intussusception, paralytic ileus, peritonitis, cholera, typhoid fever, intestinal parasites, the manifestations of intestinal autointoxication, ordinary and pernicious anemia, intestinal feeding, malnutrition; following operations on the mouth, throat or stomach, and in gastric stricture, ulcer, cancer or other disturbances where rest of the organ is desirable. I also called attention to the fact that by means of cecostomy various intestinal diseases could be investigated, and that the procedure could be used to determine the amount and nature of the intestinal juices and discharges, the character of the feces, the direct action of salines and other cathartics when injected directly into the small and large bowel, the marked, immediate vasomotor effect following hot and cold enteroclysis, to diagnose angulation, twisting, ptosis or dilatation of the intestine by *x*-raying the bowel after it has been coated with bismuth solution injected for the purpose, and for the study of many other interesting problems.

150 East Thirty-Fifth Street.

2. Gant: Local and Surgical Treatment of Chronic Diarrhea, with Description of a New Operation for Irrigating the Large and Small Intestine, New York Med. Jour., Aug. 15, 1908.

ABSTRACT OF DISCUSSION

DR. LOUIS J. HIRSCHMAN, Detroit: I believe with Dr. Gant that most of us have been a little more remiss in investigating rectal diseases in children than we have been in adults. It is surprising to find in how many of the little patients brought to us the examination of the rectum has been neglected by the physician. These children are brought to the rectal specialist as a last resort, but it is seldom that even ocular inspection has been employed by the attending physician. By means of the proctoscope we can make an ocular examination very readily, and we can make an examination of the rectum in an infant of one year through a female cystoscope. Digital examination will give a practical understanding of the condition in the whole abdominal cavity. One can even examine the condition of the appendix, the colon and sometimes the gall-bladder can be reached with the finger. I do not know that I agree with Dr. Gant about leaving a "buttonhole" in young children. A child has less resistance, and we must be more careful how we employ major surgery. But I believe that many patients with intestinal disturbance, who have not responded to drug treatment, have responded to colonic irrigations with simple saline solution when everything else has failed. Often a crying child that is not helped by any treatment will be found to be suffering from anal fissure. Again, often following infectious diseases, acute hemorrhoids may develop. In cases of apparent prolapse, it is well to be certain that there is not an invagination. Recently I saw a child who had a complete extrusion of the entire colon in whom a diagnosis had been made of prolapse of the rectum. The child had gone down from 18 to 12 pounds in weight in six weeks. I think children are just as often subject to disease of the lower part of the abdomen as are adults.

DR. C. F. WAHRER, Fort Madison, Ia.: I have seen men introduce colon tubes all the way up to four feet in length, presumably past the ileocecal valve; in some cases, however, the end returned and even protruded from the rectum; large quantities of solution were therefore thrown into the rectum. Does Dr. Gant consider insertion of a high rectal tube a possibility or an impossibility? In most instances, I think, it is a mere dream.

DR. G. S. HANES, Louisville, Ky.: A frequent affection of the child is constipation, and the chief cause for constipation in children, and one which is easily overlooked, is intestinal obstruction. This means irritation of the outlet of the bowel —that is, of the sphincter muscle. There are ten cases of constipation due to irritation around the anal canal to one due to all other causes combined. The next trouble we most frequently find is diarrhea. The diarrheas that occur in childhood are usually due to fermentation of food, a catarrhal condition or ulceration. Constipation and diarrhea, of course, are symptoms of other conditions. When a child has eaten food that has fermented and produced irritation, as soon as the canal is cleared out the diarrhea will disappear. But when it is due to ulceration, or to a catarrhal condition, we must be more careful in treatment. Not long ago, a child of 4 years was brought to me with persistent diarrhea that had lasted for 14 months. I found that it was a case of amebic dysentery. The rectum was dotted thickly with small ulcers. I introduced the proctoscope and curetted one of the ulcers and examined it under the microscope and found it seething with amebas. In the last two years I have treated more than fifty cases of amebic dysentery, most of which have come from Kentucky. Of this number, six patients were children under 10 or 12 years of age. All physicians know how difficult it is to cure a case of amebic dysentery in any patient. In fact, we do not know whether they are cured or not. I told the family physician what to do, and if the child was not cured it was greatly relieved. I have never found appendicostomy at all difficult. To do an ordinary appendicostomy, when there is diarrhea or constipation, or other condition that prevails in the lining of the intestine, there need be no difficulty in introducing the instrument through the appendix. One can pick up the appendix and determine whether or not it is patulous. The best treatment of amebic

dysentery is ordinary coal oil. I have put in as much as half a gallon and allowed it to remain as long as possible. It is a sedative and does not set up peristalsis, and the patients can retain twice as much oil as they would water. I have had patients return after 24 hours and state that they were still passing coal oil. In the diarrhea, as a rule, the diseased condition is usually in the lower bowel and it can be treated through the anus.

DR. E. H. THRAILKILL, Kansas City, Mo.: Some time ago, in a paper before the Missouri State Medical Association, I said that the obstetrician before handing the child over to the nurse should examine the anus. I have seen children with stricture of the anus which would be relieved by just a little treatment by dilatation and there would be no further trouble. I have seen a number of cases of constipation due to fissure around the anus. With a very small dilator one can cure this, but the little child will have for some time fecal matter remaining there and irritating the bowel and he will not have a movement. Intussusception occurs because the colon and sigmoid are rather long in infancy, and this part of the bowel grows slowly during the first few years and is down low in the iliac region, and thus the invagination of the sigmoid into the rectum takes place. I recently saw such a case in which the child had a prolapse or invagination of the third degree. If these little children are put into the knee-chest position the bowel will often drop back and the little sufferer will be relieved. As to cases of pericolitis due to extra-colonic conditions, I think that is true of the majority of cases of constipation.

DR. S. G. GANT, New York: All proctologists agree that it is extremely difficult to introduce the proctoscope and sigmoidoscope because of the curves of the rectum and the angulations of the sigmoid. Pressure should never be exerted in their introduction. I know of three deaths from intestinal rupture and peritonitis caused by forcible attempts to push long, unyielding tubes through the sigmoid flexure. Had I the time I should like to comment on the more common types of rectal diseases occurring in infancy and childhood. A summary of them, however, has been given in the papers. I agree with Dr. Thrailkill that sometimes extra intestinal pressure may be the cause of diarrhea (obstructive type) and constipation (obstipation), but do not agree with him that it is the most common factor, because in my experience the seat of the trouble is most frequently found within the intestine.

It is difficult to understand why constipation is not more frequent when we come to study the points of difficult passage to the feces under normal conditions and appreciate the condition of affairs when they become abnormal. Such obstructive points named from below up are the anal sphincter, levator ani muscle, rectal valves, O'Beirne's sphincter, angulations of the sigmoid, swinging transverse colon, and splenic and hepatic flexures, to say nothing of the difficulty encountered by the solid feces from the cecum perpendicularly upward. Some physicians make a universal practice of divulsing the sphincter muscle in all cases of constipation—a most pernicious practice. Dilate or cut the sphincter when the anus is tight and a good result follows, but to do this when the muscle is relaxed does no good and may do considerable harm.

Surgical intervention is unjustifiable in obstinate diarrhea until medication, dieting and enteroclysis from below have been tried without benefit. Of the procedures devised for this purpose my cecostomy, which provides a quick, safe and sure way of healing the lesions causing the frequent stools, is preferable to all others, because by means of it the medicated fluid can be made to reach all parts of the entire intestinal tract. Two conditions prevail in chronic diarrhea: The first is the laxity of the bowel and surrounding tissues, which permit the easy introduction of instruments, and the second is the constantly dilated state of the rectum by gases. In these cases the finger passes into a dilated cavity, an opposite condition to that found in persons who suffer from constipation.

TUBERCULOSIS OF THE FEMALE ORGANS OF GENERATION AND THE PERITONEUM*

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HISTORICAL SUMMARY

The study of tuberculosis of the female genitalia was secondary to that of tuberculosis of the peritoneum, although Morgagni, in making a necropsy in 1744 on a young woman who had died from tuberculous peritonitis, found the uterus and Fallopian tubes filled with caseous material and considered these organs as being the primary focus of the disease. Similar conclusions were reported by others who had found similar conditions. At this time, however, tuberculosis of the female genitalia was found only in patients suffering from a constitutional invasion. The local condition was discovered only at autopsy and had no clinical interest; it was considered simply as a pathologic curiosity. This antedated the year 1825.

Christian Fenger divided the history of our knowledge of this disease into three periods. The first embraces everything antedating 1825, which I have described. The second includes the period from 1825 to 1884; during this period peritoneal tuberculosis became better known and more frequently recognized. It was thought at that time that simple peritonitis terminated in recovery; that is, in certain recognized cases of peritonitis the patients did recover, and this fact led to the conclusion that they must be simple, while tuberculous peritonitis was thought to be always fatal. The third stage from 1884 to the present time began when Koenig proposed laparotomy as a cure for tuberculous peritonitis. It is interesting to note that Koenig reached this attitude of mind from *a priori* deductive reasoning. He had had extensive experience in successfully opening and draining knee-joints and other articulations for tuberculosis. These joints are, as we know, closed cavities lined by a serous membrane; reasoning by analogy, therefore, he concluded that, if incision and drainage cures tuberculosis of a serous membrane in a joint, it should be equally as effective in the abdomen. Acting on this conclusion he submitted four patients suffering from tuberculous peritonitis to operation, and published a paper describing the procedure, in which he reported three recoveries and one death. In 1889 he presented a second paper in which he reported 131 similar operations collected from literature and his own clinic. The results showed 107 in satisfactory condition on leaving the hospital. Of these 107, seventy-four were cured and thirty-three improved. This was the beginning of the new era in the study of this disease, and to Koenig the modern world is indebted for an entirely new concept in its treatment. Many operators in various parts of the world followed in his footsteps and thus an experience was gained that changed materially the prognosis. It was learned that cures occur sometimes spontaneously; especially is this the case with children. In the crusade for eradication of the scourge of tuberculosis the search light is being turned on every phase of the disease, and vigorous means of stamping it out are being applied wherever its head appears.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Lou's, June, 1910.

PRIMARY FOCUS OF TUBERCULOSIS

The possibility of tuberculosis of the genitalia being a primary focus is a question of which most diverse views are entertained. Some of the most careful investigators positively deny it, while others as positively assert that it is possible, although all admit that it is very rare. The readiness with which women of the present day are submitting to gynecologic examinations, and the careful discriminating diagnostic acumen that is being directed to this line of research have brought to light cases in which the only lesion to be found in certain cases has been confined to the cervix, the vagina, or the uterus. The order of frequency with which the generative organs proper are involved is as follows: Fallopian tubes, uterus, ovaries, vagina, vulva.

Genital tuberculosis may be either primary or secondary. By the former it is generally understood that the focus in the genital organs is the primary seat of invading infection. Of necessity an ascending infection is generally primary, and a descending is secondary. According to Hegar the primary ascending infection is produced by penetration of germs from the outside directly to the mucosa of the vagina, uterus, tubes, and finally the peritoneum and ovaries; and the secondary, by penetration of germs into lymphatics through minute breaks in the continuity of the tissue of the genital canal, the germs being so carried to the Fallopian tubes directly or by way of the pelvic peritoneum into the tubes at the fimbriæ.

The source of the infection may be the seminal discharge of tuberculous men during intercourse. This has been strongly advocated by some investigators and seems *a priori* to be quite reasonable. But so many cases of tuberculosis of the epididymis with tubercle bacilli in the urine and seminal discharge in married men are known without the wife becoming infected that the chances seem to be against this theory. Even granting that this might be the source it would require unusually favorable conditions for its success. The preparation of the soil for the implantation of the infection by gonorrhea becomes a prerequisite. The puerperal state with its attendant traumatism offers favorable soil for primary infection. Martin has noted the fact that there is frequent coincidences between tubal pregnancy and tubal tuberculosis indicating a previous lesion.

Dührssen has had a case, mentioned by Amann, in which catheterization of the uterus to overcome sterility was followed by acute tuberculosis of the tube and peritoneum; whether infection was carried in by the catheter or whether the operative interference was simply the occasion for the acute outburst is a question.

It is possible that the street dust loaded with tubercle bacilli and swept up by a woman's skirts and thus deposited on the external genitals may be a source of infection.

TUBERCULOSIS OF THE PERITONEUM

Method of Invasion.—Tuberculous invasion of the tubes and ovaries may precede that of the general peritoneum, be contemporaneous with it or follow it. They are frequently found existing together and probably have the same origin. In tuberculous peritonitis, the disease reaches the peritoneum by three channels: first, hemic, through the blood-current, which gives rise to the acute miliary form of general tuberculosis; second, by contiguity, which form is secondary to tuberculosis of the lymphatic system, or to ulcers of the bowel which have not yet perforated the peritoneal coat; third, by continuity, which form arises from extension of ulceration in the bowels or Fallopian tubes. This is spread over the peritoneum by lymph-currents or, as some assert, by gravity along the serous surface. The direct primary hemic method is believed to be extremely rare.

Treatment.—There is practically a unanimity of opinion among all who are experienced in handling this disease, that, if possible and practicable, the focus of infection should be removed. On this point William J. Mayo says: "The treatment of tuberculous peritonitis should embrace not only the treatment of the peritonitis, which is symptomatic, but the removal of the source of infection, which in the majority of cases will be found in the Fallopian tubes, appendix or intestine." Murphy says: "The surgical treatment of tuberculosis of the peritoneum involves the following propositions: (1) to remove or shut off the source of supply to the peritoneum of new tuberculous debris; (2) to remove the products of the infective process from the peritoneum; (3) to increase the tissue proliferation for the encapsulation of the foci already present; and (4) to avoid mixed infection."

It is therefore desirable, to say the least, that a diagnosis of the presence of tuberculosis be made in advance of operation. The investigation should embrace a careful examination of the genital organs by touch, so as to determine their exact condition. The fact that this malady is frequently discovered in young girls should be kept in mind. The history of the case with relation to heredity, loss of appetite and weight, and the possibility of venereal infection, should be carefully considered. Martin recommends the application of Koch's tuberculin injection test. He also lays great stress on the subconjunctival instillation of Pirquet-Calmette. He considers this especially important in cases of tuberculosis complicating pregnancy, for the reason that the reaction determines the amount of resistance being offered by the patient, and thereby indicates the wisdom of allowing pregnancy to continue.

But when all these precautions have been taken into consideration, surprise may await the surgeon, on opening the peritoneal cavity. Allport has voiced this in his forceful and characteristic style when he says: "Uncertainty is the characteristic element in the preliminary diagnosis of all tuberculous infection of the peritoneum; surprise inevitably awaits the surgeon as he opens the abdomen; and the unexpected sits ever at the elbow of the pathologist as he examines the specimen in the laboratory."

Operation.—In dealing with any individual patient the method of procedure must be adapted to the condition presented and so may vary with every case. Experience has evolved some pretty definite and fixed rules. First, it must be constantly kept in mind that spontaneous recovery is often possible; at the same time, it must not be forgotten that Nature in her effort to overcome the disease can be greatly assisted in many cases by the surgeon. When the operator has made the abdominal incision and recognizes that he is in the presence of a more or less extensive tuberculous peritonitis, even with distinct foci in the uterine appendages, what shall be his rule of procedure? He should not be led astray by the protean forms of the disease that reveal themselves in successive cases. The whole situation becomes clear when he recalls the fact that there is but one basic lesion

of which the case in hand is one of its stages. Nature is ever waging her war of resistance. Her line of defense may be overwhelmed in the first onset and a condition of hopeless route and annihilation may be presented. This condition obtains in cases of ulceration, perforation, cheesy degeneration, and mixed infection, with resulting hectic fever. On the other hand, we may have a picture of disseminated miliary tubercles accompanied by abundant ascites; this exudate is indicative of a protective process due to irritation of the unaffected peritoneum. If in this process the individual has gained advantage in the fight, this irritation becomes an obliterative peritonitis, the final process resulting in fibrous or cobweb adhesions. Another picture is presented when the infection has invaded the peritoneum from contiguous organs, and presents an ulcerative or cheesy form which is accompanied by fibrous nodules, cicatrizing ulcers, masses of plastic exudate possibly here and there organized into obstructing bands of fibrous tissue. Adhesions and obstructing bands may form sacculated receptacles containing tuberculous debris known as pseudocysts, which may contain pus; this indicates mixed infection, possibly a colon bacillus. The omentum may also be matted together, being an extension of the same process.

As has been said, positive diagnosis is difficult and uncertain, hence the surgeon must be ready to deal wisely with the condition found. In the practical handling of these cases they may be divided into three classes, first, the ascitis; second, the adhesive; and third, the cheesy, attended usually with debris and pus.

In the first or ascitic variety the serum should be evacuated and the wound closed without drainage. These are the cases that recover so mysteriously and so permanently. As a sequel to this surgical intervention, the patient should receive the benefit to the fullest extent of such theraputic measures as climate, hygiene and diet. These are usually cases of general miliary peritonitis. If a definite focus is discovered in the tubes or the appendix, its removal is desirable. But quiescent adnexa which have been long buried in protecting adhesions should not be disturbed.

In the second class, or adhesive variety, if the plastic exudate is quite universal, and a tendency to organize into adhesive bands is apparent, no interference should be attempted unless a distinct focus can be easily reached and removed. The wisdom of attacking this for its removal will depend on the general condition of the patient. The wound should be closed without drainage.

In the third class of cheesy deposit, with collections of debris, some operators, acting on Koenig's suggestion of the analogy between articular joints and the peritoneal cavity, have advocated curetting, excision, sature, and dissection of the tuberculous masses. This is too radical surgery. Experience has shown that it is disastrous. Adhesions that presumably shut in intestinal ulceration should be carefully preserved, but collections of debris and pus should be as carefully cleansed and the cavity drained with cigarette drains of gutta-percha tissue. Gauze drains should be proscribed. Allport says: "Gauze drainage is a snare of the devil and is especially apt to be followed by serious and often fatal fecal fistula in the dry forms of tuberculous peritonitis. Statistics show conclusively that its practice leads to evils which are worse than the original disease."

Parker Syms in summing up an article read before the New York Surgical Society, March 13, 1907, says:

We have learned that operations should not be undertaken during the first year of infancy; we have learned that surgery offers but little hope in the adhesive variety of the disease; we have learned that the serous variety offers the best prognosis under the various forms of treatment and that the surgical treatment of this variety offers the best results obtainable in this disease. But the most important lesson we have learned is that the scientific operation of today is the one which has for its foundation the removal of the original focus of the disease, as the tuberculous Fallopian tubes, vermiform appendix, mesenteric gland, etc.

CASE REPORTS

My experience embraces seven cases widely distributed through my years of practice.

CASE 1.—Miss R. T., aged 32, referred to me as a subject of chronic general peritonitis, May, 1887. Without any suspicion of tuberculosis I opened the abdominal cavity for the purpose of drainage, and with the expectation of finding pus foci in the Fallopian tubes. The entire peritoneum was covered with a moist grayish exudate agglutinating universally the omentum and the coils of intestine. Never had I seen such a case before. There was almost no literature on this subject at that time, and in my ignorance I separated the adhesions and drained freely in all directions with gauze. The result, of course, was a prompt fatality.

CASE 2.—Mrs. S. M., at the New York City Hospital, came into my service May, 1894, as a case of double adnexal disease, the adhesions filling the entire pelvis. The patient's general condition was bad, with a daily temperature of 101 F. I performed a vaginal pan-hysterectomy. On examining the specimen during its removal miliary tubercles were apparent on the peritoneum surface of tube; the uterus and ovaries were cheesy. As the patient was in no condition to withstand a laparotomy, I elevated the patient in the Trendelenburg posture, and with retractors opened wide the vaginal opening into the peritoneal cavity, after which the pelvis was drained vaginally with iodoform gauze. The patient died in less than a year.

CASE 3.—Mrs. G. L., City Hospital, June, 1894, had symptoms of almost constant pain in the left ovarian region; diagnosis, salpingitis. On opening the abdominal cavity I found a condition of general miliary tuberculosis. The left tube and ovary were bound together by adhesions, the tube being large and covered with tubercles. There were no other adhesions, and no ascites. The left adnexa were removed, the patient was wheeled into the sunlight and the direct rays of the sun were allowed to pour into peritoneal cavity through the widely opened incision. The wound was closed without drainage. The patient made a complete and permanent recovery.

CASE 4.—Captain —— of the Salvation Army, presented herself at my office December, 1908, giving a history of constant pain in the right ovarian region, which had grown steadily worse for about a year, with the pain intensified at menstrual periods. There was loss of strength and flesh. The abdomen was distended and tympanitic, with dullness in the flanks. A hard nodular mass filled the right pelvis, crowding the uterus to the left side. I made a diagnosis of probable tuberculosis, and subjected the patient to a laparotomy at the Woman's Hospital, January, 1909. On opening the abdominal cavity I found coils of intestine firmly agglutinated together and firmly attached to the right adnexa, forming a large mass. The surrounding peritoneum and the fundus of the uterus, where the right horn could be seen peeping out of the coils of intestine, were dotted with miliary tubercles. In attempting to separate the intestines, I found that their walls were thoroughly invaded and quickly felt that the part of wisdom was to desist from further interference. I therefore sponged the cavity dry and closed the wound without drainage. Temperature ran daily to 101½ F. for about a week. Under careful and enforced diet, strength returned rapidly, and the patient left the hospital in four weeks. Outdoor life, day and night, and good nourishment were enjoined, and one year later she reported at my office greatly improved and ready to go back

to the ranks of the Salvation Army. There was no ascites and the pelvic mass had diminished to at least one-half of its former proportions. I have not seen the patient since.

CASE 5.—Miss E. D. M., aged 22½ years, was a private patient of Dr. Weiss, Mt. Vernon, N. Y., who has kindly furnished me the following history:

"I first saw the patient on Dec. 1, 1906, and found her suffering with an attack of acute lobular pneumonia (lower left lobe), with no cough but felt oppression in chest, had high temperature and felt sick.

"The history leading up to this acute condition in brief was this: The patient had been more or less tired for some five or six weeks, but still went to work, when she was suddenly taken down on or about December 1 with a chill and the acute condition above spoken of. The pneumonia took the usual course and on Jan. 24, 1907, some seven weeks after the beginning of the original illness the patient returned to work. At this time the pneumonia had resolved and, while her general condition was fair, she was still weak. The patient continued to go to her work (that of a stenographer), from Jan. 24, 1907, to Feb. 28, 1907, about five weeks, when she again noticed that she had severe pain in the left lower abdomen. She persisted in going to work, however, until February 28, when the pain became so great that she remained at home. Examination at this time showed nothing special in the thorax. There was a general swelling and distention of the abdomen. Percussion of the flanks showed some slight evidence of liquid in the abdominal cavity. There was thickening of left Fallopian tube with considerable pain on pressure; otherwise the patient's condition was negative.

"The usual hygienic and tonic treatment was instituted, the tentative diagnosis being tuberculous peritonitis. On March 18, 1907, Dr. Goffe kindly saw the patient with me and gave his opinion that an absolute diagnosis was difficult to make and advised close observation.

"Four days later patient was transferred to the Mount Vernon Hospital. The distention at this time had improved somewhat, the pain, however, in the lower left side persisted, and there was more or less fever with increased pulse-rate.

"During the following two weeks patient appeared to improve. In consideration of this fact, on consultation with Dr. Goffe, it was decided to do an exploratory laparotomy. Accordingly on April 3, 1907, under the direction of Dr. Goffe, I opened the abdomen and found the peritoneum studded with many patches, congested, and all the organs adherent. The parietal peritoneum itself was fully ⅜ of an inch thick. The left tube was found considerably enlarged and adherent. It was decided to close the abdomen without drainage and institute a sustaining and tonic line of treatment. After a few days the abdominal wound broke down and large quantities of pus came from the sinus.

"During the summer of 1907, the patient had chills with continued rises of temperature, sweats, lost considerable weight, and drained a great deal of pus. Examination showed some of these sinuses extending from 5 to 6 inches under the abdominal wall, one in particular, running up from the wound on the right side toward the liver.

"From April until October the fresh-air and hygienic treatment in every sense of the word was carried out to the letter: not only were the windows of the patient's sleeping apartment kept open day and night, but she was carried daily down to the lawn, where she passed her time either on a couch or in a hammock, thus enjoying the benefit of the outdoor treatment continuously. In addition to this she was given tonics and proper food.

"About August 1, 1907, the heretofore weak and bed-ridden patient began to show perceptible signs of improvement and, while her weight at that time could not very well be taken, her general appearance, in spite of the large amount of drainage from the wound, showed considerable weekly improvement. This went on continuously until in September the patient was permitted to walk about and take exercise. The improvement continued along these lines until October 6, when in addition to the pus drainage there were evidences of a fecal fistula.

"From October, 1907, until April, 1908, in spite of the inclement winter weather, the same open-air treatment was continued. By April 1, 1908, the patient had improved to such a degree that it was decided to transfer the patient to her own home. On the day of transfer (April 6), the patient's weight was found to be 102 pounds, as compared with 104 or 105 pounds, which was her best previous weight in health.

"From April 1 until August 1, 1908, she remained at home continuing in about the same general condition, with an occasional chill and a small break-down possibly of some gland or pus pocket as shown in the increase of drainage, improving, however, in general condition.

"She was permitted to take up some of her previous business duties. Accordingly, she accepted a position which permitted her four to six hours light work, with the coincident exercise of walking daily back and forth to her place of business. This test she stood remarkably well and, with the exception of one or two minor colds during the winter, improved to such an extent that on April 6, 1909, she appeared sufficiently recovered to be able to take up her more arduous duties as chief stenographer in a large law office in a town about ten miles away. This, of course, included not only walking to the station, but twenty miles' railroad travel as well. She stood the strain of this new occupation very well until midsummer when she began to lose in weight. She then took a three weeks' vacation in the Adirondacks and returned to work in August considerably improved.

"From that time, August, 1909, to the time of the present writing, March, 1910, she has enjoyed very good average health, with the exception of an occasional attack of bronchitis, generally the result of some indiscretion in dress. She looks well, eats well, and is able to carry out all the duties of her position and, while she tires from time to time, it cannot be said that she does so to any greater extent than any other person might under similar circumstances.

"During this time, namely, from about July, 1907, to March, 1910, an effort has been made at all times to carry out the open-air treatment, and particular attention has been paid to regular meals, largely of the proteid type, with very little medication. An occasional tonic or emulsion or a little ordinary cough medicine has been about all the medical remedies employed. No alcohol has been used. The patient has been advised to rest as much as possible and also to get as much sleep as circumstances will allow.

"The patient now looks well, has a good color, is strong and eats and sleeps well. She weighs at time of writing 103 pounds. There remains a small fistula which discharges some pus daily and occasionally some fecal matter, showing that the fecal fistula is not entirely healed. The only trouble the patient now experiences is that, when the sinus closes, the fecal matter seems to accumulate between the intestines and the abdominal wall and, until relieved, there is more or less pain and distress. Other than that the patient has no discomfort.

"In February, 1907, just subsequent to the attack of pneumonia, when the patient again went to bed, she menstruated continuously for about three weeks before being removed to this hospital. From about March 22, 1907, to Jan. 4, 1908 (a period of ten months), menstruation ceased entirely. On Jan. 4, 1908, it recommenced and has remained regular ever since in time, quantity and quality.

"A recent internal examination showed no especially abnormal conditions, except that the uterine organs and adnexa are fixed and there is some thickening and fulness in the left broad ligament and tube.

"Examination of pus made by our pathologist, Dr. Goldhorn, showed nothing of interest.

"My interpretation of the general low-grade peritonitis which commenced in March, 1907, is that the infection was due to the pneumococcus germ secondary to the original attack of pneumonia.

"In closing a word might be said in regard to the treatment. It will be noticed that after the original laparotomy it has been entirely medical and that there has been no surgical interference. This has been done advisedly, for the reason that the patient showed continuous improvement, and the condition and the internal conditions, so far as they could be interpreted from the laparotomy and subsequent course of

the disease, were such that any surgical procedure would be fraught with so much danger that the inconvenience of a small fecal fistula was considered preferable to a possible unfortunate outcome, the result of a surgical interference."

CASE 6.—Mrs. S. R. H., aged 26, had been married five years, had never been pregnant and had always been a great sufferer from dysmenorrhea. Four years ago the patient had an attack of pleurisy, being in bed ten days. During the following two years she complained of painful breathing and a stitch in the side. She lost flesh and became very weak. For the past two years she has suffered pain in both ovarian regions, at intervals so intense that morphin had to be used. Dec. 25, 1909, the patient entered Lawrence Hospital, Bronxville, N. Y., where I operated for salpingo-oophoritis. The adnexa of each side were bound together with plastic exudate and the tubes, as well as the neighboring coils of intestines, were freckled with miliary tubercles. The adnexa were removed with the exception of the left ovary which was apparently free from disease. There was no ascites. Recovery was prompt. Three months later, April 11, the patient reported a gain of 5½ pounds; she was never so fat in her life. She can walk now without pain, but tires easily, is living out of doors and sleeping on the veranda.

CASE 7.—Mrs. E. D., aged 44, was subjected to laparotomy for constant pain in the abdomen, which was accounted for by adhesions. There was also an old hardened chronic condition of the left adnexa. The omentum was attached to the sigmoid flexure and the fundus uteri. These adhesions were separated and part of the omentum removed, as was also the ovary and tube of the left side, which were bound firmly together. There was no evidence of tuberculosis present, but the pathologist reported that the walls of the tube were pretty generally invaded with tubercles. The patient made a prompt recovery and has been relieved of her pain. This case undoubtedly stands as an example of spontaneous recovery.

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ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore: The possibility of tuberculous peritonitis should always be borne in mind in any obscure abdominal condition, especially in the presence of an abdominal tumor. An illustrative case is that of a colored woman whom I saw about four years ago. She was brought into the hospital several weeks after delivery. Her only complaint was that the abdomen was just as large after delivery as before. After examination, we decided that there was probably an ovarian cyst complicating pregnancy. Not until the patient had been anesthetized and placed on the operating-table did we notice a deep-seated mass high up in the abdomen, which made us think that the condition was not one of ovarian cyst, but possibly one of tuberculous peritonitis. At operation, we found the woman suffering from tuberculous peritonitis with an encysted ascites, while the deep-seated mass proved to be a much infiltrated great omentum. The case was particularly interesting, in view of the fact that the presence of one abdominal tumor, the encysted ascites, had misled us, and that the other tumor, the infiltrated omentum, had put us back on the right track.

In estimating the good results following operative treatment in this disease, one must bear in mind that there is a strong tendency in many cases toward spontaneous recovery. This is well illustrated in a case reported by Louis, of a young man suffering with very advanced tuberculous peritonitis, with marked ascites, emaciation, etc. In this condition he fell a victim to Asiatic cholera, and recovered not only from the cholera, but also from the tuberculous peritonitis.

DR. C. C. FREDERICK, Buffalo: Patients with acute tuberculous peritonitis sometimes do not survive the shock of operation. With the exception of that one source of fatality following operation, I have never seen a patient die as a result of operation nor fail to see a patient apparently completely recover. I have seen many who have passed through the same course as that given by Dr. Goffe in the history of his patient. I have seen them go for a period of from six months to a year or a year and a half or two years with a stormy career, but eventually recover. I have never seen one left with a permanent fecal fistula or any other fistula, although the infection of the abdominal scar as the result of contact of the tuberculous infection with the wound at the time of operation is sometimes a source of trouble for several weeks or months after the operation. Four or five years ago, I began using drainage through Douglas' pouch in these cases almost as a routine procedure. I broke up all the adhesions in the adhesive cases in which the intestines had been lifted into the upper part of the abdomen by the accumulations of fluid beneath them and the peritoneum, all the mesentery having become adherent, so that one could see simply a mass composed of intestine in such condition that one could not see a convolution of the intestine. I free the adhesions completely, sometimes the operation being 30 or 45 minutes in duration. All the tuberculous surface is exposed to view and to contact. The abdominal cavity is sponged out. In women usually the focus of infection is the tube. Then a drain is passed down through Douglas' pouch. I always put in a big drainage tube with fenestræ at the top. The tube is kept in for weeks so as to insure free drainage from the lower part of the pelvic cavity even after the upper part may be shut off by adhesive inflammation and lymph. Such treatment is almost invariably followed by recovery in cases of tuberculous peritonitis.

DR. ROBERT T. GILLMORE, Chicago: Recently, I have been unfortunate enough to have three cases of tuberculous peritonitis or salpingitis. The symptoms are much the same as those of tuberculosis in other parts of the body, though not quite typical as regards the evening rise of temperature and the night sweats. In some cases the condition comes on insidiously with slight pain if the disease originates in a tube, and it may not be greater on the side on which operation shows the greater pathologic condition. The pain is dull and there is usually some tympanitis. Besides those symptoms I have been able to get nothing characteristic. The temperature may be normal; the pulse rapid. A diagnostic point which should not be neglected is the von Pirquet reaction. This is not a positive reaction, and in adults is of negative value. If old tuberculin is used and the reaction does not occur it may be assumed that the condition is not tuberculous. Another diagnostic point is leukopenia instead of leukocytosis, which occurs with any of the pus-producing organisms. One of my patients had been treated for three months for typhoid fever; owing to similarity of the clinical picture the diagnosis was not inexcusable, but had the indefinite bilateral pelvic mass been palpated the diagnosis would have been easier. Still another point is the finding of fluid in the abdomen. Sometimes there is postural accumulation of fluid, such as is seen in non-compensated cardiac conditions or in lesions of the kidneys. If disease of these two organs can be eliminated tuberculous peritonitis may be suspected.

DR. A. MILES TAYLOR, San Francisco: I have been working along these lines for some years, and I agree with Dr. Goffe that it is very difficult without a thorough knowledge of pathologic conditions to make a correct diagnosis. However, with the means we now possess in the laboratory, and with long experience, we should be able to overcome this. I am much interested in the case of tuberculous tube with ectopic gestation, this being the only case reported so far, other than those which I reported in a monograph written ten years ago, and in a paper which I read on May 10, 1910, before the San Francisco County Medical Society, entitled "Tuberculosis of the Fallopian Tubes as an Etiologic Factor in Extra-Uterine Pregnancy," wherein I reported 64 patients operated on, and 42 of whom were proved, by pathologic laboratory examination, to have tuberculous tubes. I believe that the primary infection may be, and is, introduced through the vagina, either by examination with finger, by coitus, or through abrasions of the vulva. In the secondary form it is introduced by foci in some other organ of the body, as the lung, hip, or knee joint,

or any other organ infected with this disease. The monthly congestion of these organs certainly is a field inviting to the tubercle bacilli, as well as to any other pus-forming microorganism. Many surgeons have reported tuberculous disease of the tubes even in girls of 17 and upward. Such men as Kaufmann, Amann, Kleinhans, Tuffier, Pozzi, Delbet, Hartman, Faure, Sick, Bier, Murphy, Ochsner, Tuholske, Riolanus, Vassall and Regnier de Graf have reported this condition, but none of these gentlemen has associated tuberculosis of the tube as a cause of ectopic gestation previous to this time.

DR. H. T. BYFORD, Chicago: When we separate extensive adhesions in cases with but little effusion we often get ulceration and breaking down of the intestinal walls. Hence, I think, it will not do to recommend the separation of adhesions in all cases. In view of the fact that many recover without operation, we should look at the matter from a conservative standpoint. These adhesions are Nature's method of limiting the disease, and, usually, form again. You cannot drain any part of the peritoneal cavity longer than a day or two. As a rule I drain only long enough to let out the excess of material which Nature has not been able to take care of. In most cases it is enough to let out the fluid and remove the septic focus, and, if desired, let in a little air or sprinkle in a little iodoform as a local stimulant. Although the ovaries and tubes may not be the primary focus, they usually require removal in cases of pelvic tuberculosis, because the monthly congestion seems to favor the development of germs.

DR. TOD GILLIAM, Columbus, O.: I presume that most of us are influenced by our own experience in these affairs. A few years ago, Dr. Byford and I were pitted against each other in Chicago on this same subject. I am a strong advocate of operative interference in tuberculous peritonitis with effusion. I am an advocate principally from my own experience, which has been most favorable, and because one gets immediate and convincing results. When the abdomen is opened and the fluid let out, usually that is the end of the trouble. I have sometimes had reaccumulation, but even this would disappear and almost every patient with uncomplicated tuberculous effusion has been cured. I never interfere with the adhesions of tuberculous peritonitis if I can help it, and I am very particular not to do any damage to the intestines. I have never known an intestinal tuberculous fistula to heal, and I dread them greatly. If I find that the tubes are involved, and I can get them out without damage to the intestines, I remove them. In cases of this class I have had excellent results.

DR. J. R. GOFFE, New York: I believe in the conservative method of treating these patients as I indicate in my paper. In one of the cases reported, the young woman had been suffering from one to two years and was finally obliged to give up her work in the Salvation Army. I made a diagnosis of tuberculous peritonitis, with the focus probably in the right appendages, and did a laparotomy. There was considerable serum, which I carefully sponged out. In attempting to separate the adhesions about the diseased appendages on the right side, I found that the walls of the intestine were involved, and, after separating just a few "of the uppermost coils of intestine," I desisted and restored them to their original position and closed the abdomen without drainage. She made a beautiful recovery, the most satisfactory convalescence I have ever witnessed. I take the stand that in all these cases conservative work is the best. Remove the focus, if easily and safely reached, but refrain from all serious damage to the tissues, drain out the fluid and close the wound.

Rectal Fistula.—Pelvi-rectal fistula may even track round and invade the bladder. In other cases the fistula may cause inflammation of the peritoneum, and from the peritoneum the inflammation may spread on to adjacent coils in the small intestine. The small intestine may even be adherent to the inflamed peritoneum in the pelvic area.—F. C. Wallis, in *Clinical Journal.*

A FORECAST OF THE UNITED STATES PHARMACOPEIA IX *

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It is generally well known that the Pharmacopeia of the United States of America had its origin in the desire of the leading men in the medical profession of a century or more ago to secure for their patients medicaments of uniform strength and activity and to eliminate from the practice of medicine, so far as possible, drugs and preparations of unknown value or of recognized uselessness. In accordance with these intentions the first edition of the Pharmacopeia of the United States was devised by capable, broad-minded men as a safeguard to the health of the American people, and the preface to that work outlines, at some length the objects and the ideals of the founders.

As an illustration of the aims of the originators I may be permitted to quote from the initial paragraphs of the preface to the first U. S. P.:

> It is the object of a pharmacopeia to select from among substances which possess medical power, those, the utility of which is most fully established and best understood, and to form from them preparations and compositions, in which their powers may be exerted to the greatest advantage.
>
> The fault of the lists of the materia medica which have been adopted in different countries has always been their redundancy, rather than their deficiency. The number of articles necessary in the management of diseases is always far short of the catalogue afforded by most pharmacopeias.
>
> The value of a pharmacopeia depends on the fidelity with which it conforms to the best state of medical knowledge of the day. Its usefulness depends on the sanction it receives from the medical community and the public, and the extent to which it governs the language and practice of those for whose use it is intended.

The assertion has been made that the materia medica of a century ago might be considered as "lilliputian" when compared with the variety of the materials available at the present time.

This statement should not go unchallenged in view of the fact that, despite the principles laid down in the preface quoted above, the founders of the U. S. P. nevertheless saw fit to include in that book more than 600 drugs and preparations, which they considered to be of sufficient merit to warrant continued use. In addition to this, a review of the "International Pharmacopeia," compiled by A. J. L. Jourdan, first published in 1828, will convince anyone that the materia medica of that early day was both complex and varied.

An interesting reflection of the direct effect of the compilation by Jourdan, just referred to, is found in the preface to the U. S. P. for 1830, which says in part:

> It is highly desirable that uniformity in the preparation of medicines should everywhere prevail, for the benefits accruing from the mutual interchange of the medical writings of different civilized nations must be greatly affected by any material difference in the nature or composition of the remedies employed. . . . It is a duty, therefore, which we owe to the cause of pharmacy to throw our own weight into that scale which already preponderates, and thus contribute to the production and maintenance of the desired uniformity.

The introduction of proprietary medical schools in the earlier decades of the nineteenth century appears to have been accompanied by a decadence of the high ideals

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

once dominant in American medicine and the United States Pharmacopeia was among the lines of effort to be most seriously affected. Without discussing this particular influence further, it may be pointed out that the variance of opinion regarding the field of usefulness for a pharmacopeia that has been manifested in this country during recent years, has led us to overlook the rather limited field occupied by the Pharmacopeia of the United States during nearly fifty years of its existence.

From 1830 to 1880 the chief and, practically, the only direct use for the Pharmacopeia was as the basis for a commentary, the U. S. Dispensatory, which was developed and continued by the chief editors and the publishers of the Pharmacopeia. During all of this period, the history of the Pharmacopeia is so intimately associated with that of the Dispensatory, that many otherwise intelligent medical practioners did not know, or at least, did not appreciate that the two books were not identical.

We should not forget, however, that the thanks of all who are in any way interested in the development of the science of medicine in this country is and ever will be due to the originators and editors of the "United States Dispensatory," Dr. George B. Wood and Dr. Franklin Bache for their far-sighted policy of continuing the Pharmacopeia along the high plane on which it was founded.

The really slow deviation from the original intent of the founders of the Pharmacopeia is well illustrated by Table 1, showing the comparative number of vegetable, chemical and animal drugs and the number of Galenical preparations in the several editions of the U. S. P.

TABLE 1.—THE NUMBER OF DRUGS AND GALENICAL PREPARATIONS IN THE VARIOUS EDITIONS OF THE U. S. P.

	1820.	1830.	1840.	1850.	1860.	1870.	1880.	1890.	1900.
Vegetable	254	260	281	297	312	321	264	255	220
Chemical	109	116	124	140	176	192	233	239	268
Animal	12	15	17	19	18	18	15	18	21
Galenical	246	229	266	312	367	440	481	473	443
General Formulæ	...	...	...	...	...	...	4	5	6
Total	621	620	688	768	873	971	997	990	958

It will be noted that, in the first revision of the U. S. P., the number of official articles was actually reduced and that, following this date, the sum-total of articles increased rather rapidly to 1870 and apparently reached a maximum in 1880, from which time the number of official articles appears to be again gradually decreasing.

The evident causes for the increases in the number of articles official in the U. S. P., in the decades from 1840 to 1870 inclusive, are of course varied. Not the least among these causes, however, is the part taken by pharmacists in the several revisions including and following that of 1840, and the influence that the introduction and increase of eclectic, botanic and other "new" schools of medicine had on the practices of medicine, as well as pharmacy, in these United States.

Altogether, the several editions of the Pharmacopeia appear to reflect the decadence of the medical instruction and medical ideals in this country in a way that as yet, has not been sufficiently well recognized.

The U. S. P. VI, or that of 1880, as it is more generally known, represents a revolution in Pharmacopeia-making in this country, but, unfortunately, the revolution was originated and carried out by pharmacists, and medical men took little or no part in it.

Dr. E. R. Squibb,[1] in commenting on the U. S. P. VI, says:

> It is by far the best Pharmacopeia of the time, because it is the result of more labor and research than any other, and by hands as skilful as any other.
>
> In its general complexion and tone it is pharmaceutical rather than therapeutical. That is, while its general tendency is to both polypharmacy and polytherapy, its greatest redundancy is in its pharmacy; and this is not to be wondered at, from the constitution of the committee of revision and from the fact that the pharmacists did almost all of the work.

Since 1880 the pharmacists of the country have continued to bear the burden of pharmacopeial revision with little or no assistance from the medical profession, and the U. S. P. has continued to be, primarily, a pharmaceutic reference-book, with little or no regard to therapy or therapeutic needs.

Some indication of the comparative scope of the Pharmacopeia of the United States is evidenced by Table 2, showing the number of titles included in fourteen of the leading pharmacopeias of the world, with the comparative number of general headings, crude drugs, chemicals and Galenical preparations.

TABLE 2.—NUMBER OF TITLES, ETC., INCLUDED IN THE SEVERAL NATIONAL PHARMACOPEIAS

Pharmacopeia.	Published.	Total Titles.	General Headings.	Drugs.	Chemicals.	Preparations.
British IV	1898	826	0	189	186	451
German IV	1900	626	23	193	176	234
United States VIII	1905	958	6	241	268	443
Spanish VII	1905	1073	0	269	260	544
Dutch IV	1905	673	17	200	182	274
Japanese III	1906	706	14	204	207	281
Belgian III	1906	722	25	185	173	329
Austrian VIII	1906	698	19	232	160	287
Danish VII	1907	489	22	142	144	181
Swiss IV	1907	853	29	244	227	353
Swedish IX	1908	583	19	144	179	241
French V	1908	1122	48	271	293	510
Italian III	1909	669	18	164	194	294
Hungarian III	1909	551	18	142	183	204

Excepting the pharmacopeias of Spain and France, which are dominated by conditions not prevailing in other countries, it will be noted that the U. S. Pharmacopeia excels in the total number of official titles.

Another interesting fact is that the two pharmacopeias, the Swiss and British, having the next highest number of official titles are, like the U. S. P., in a way controlled by the dispensing interests involved. The Pharmacopeia of Switzerland is published under the auspices of the Swiss Pharmaceutical Society, while the British Pharmacopeia is largely dominated by the Society of Apothecaries, which represents the more numerous and more influential "general practitioner" who, with the assistance of the "chemist and druggist" is well able to dictate the scope and content of the Pharmacopeia.

Eliminating the pharmacopeias published in countries where special conditions appear to make a large number of official articles necessary or desirable, our own Pharmacopeia is the most prolix, and, as constituted at the present time, does not reflect a satisfactory development of medical science so far as pharmacal therapy is concerned.

Recognizing the old adage that "a multiplicity of remedies is an indication of incompetency or ignorance" physicians and others who are interested in divorcing the science of medicine from the possible domination of commercial interests looked forward rather anxiously to the outcome of the United States Pharmacopeial Con-

1. Ephem. Mat. Med., 1883, p. 201.

vention held in Washington on May 10, 11 and 12 of this year.

That this outcome is not altogether promising, from a progressive point of view, is evidenced by the reports of the convention which have appeared in the several medical and pharmaceutical journals. Thus the *New York Medical Journal*, (May 14, 1910, p. 1020) in commenting on the outcome of the Pharmacopeial Convention, says regarding the scope of the Pharmacopeia:

> The convention took the ground that the extent to which a drug was used is a safer criterion of its availability for introduction into the Pharmacopeia than the expression of opinion regarding its therapeutic value. Consequently the use rather than the therapeutic value of a drug will be taken as a guide by the committee regarding admissions and deletions.

This expression of opinion is justified by the fact that the limiting clause that, "there should not be included rarely used substances or those whose value and use has not been established" was, on motion, eliminated from the first paragraph of the general principles to be followed in revising the Pharmacopeia.

The paragraph on scope of the Pharmacopeia as finally adopted provides essentially that the Committee of Revision be authorized to admit into the Pharmacopeia any medicinal substance of known origin; but no substance or combination of substances shall be introduced, if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights, and the list of substances should be carefully selected, with standards for identity and purity as far as possible.

So far as the physician is concerned, this one paragraph involves the important features of the revision of the Pharmacopeia, as the interpretation put on it by the majority of the Committee of Revision will determine whether the Pharmacopeia of the United States is to be developed solely as a legal standard for the many thousands of medicaments used by man in the treatment of disease, or whether it shall continue as a basis for medical prescribing and contain only descriptions, formulas and standards for therapeutically active or useful medicines.

In this connection, it may be well to point out that the Committee of Revision has been made responsible for the nature and content of the U. S. P. IX and that the members of the committee will not be in a position to shirk criticism should the result of its work not comply fully with the wishes of the interested owners of the Pharmacopeia or the accepted facts that are clearly evidenced at the time.

It goes without saying, therefore, that the members of the medical profession still have an opportunity to demonstrate the validity of the claim that the Pharmacopeia, being issued under the joint authority of physicians and pharmacists, should be an authoritative list of remedial agents representing the best and most active therapeutic agents known to physicians and of the purest and most reliable quality that can be furnished by pharmacists.

The question frequently heard, "Who is to determine the medicinal value or usefulness of a medicine?" is based on sheer sophistry. The value or usefulness of a medicament is to be determined according to the best light of the day, and no one will believe for a moment that the substance thought useful to-day will continue to be considered so for all time to come.

The radical nature of the changes which have been brought about in our ideas regarding the usefulness of medicaments can be well illustrated by the following items from the materia medica of a century or more ago:

"Toad powder" was at one time a valued medicine and was said to "provoke urine and cure the dropsie, if curable. Outwardly applied, it draws out the poison of carbuncles. Blown up the nostrils, it stops their bleeding. Applied to the soles of the feet, it draws away distempers from the head, helps frenzies and fevers. It is also good against old ulcers and fistulas and biting of serpents."

Spermaceti, an article known to modern medicine less than three hundred years, was lauded during much the greater portion of this period as "the sovereign'st medicine on earth for inward bruises resulting from falls and similar injuries." It was also asserted to be "of considerable use in pains and erosions of the intestines, in coughs proceeding from sharp defluxions, and, in general, in all cases where the solids require to be relaxed or acrimonious humours to be softened."

No medical practitioner to-day uses toad powder as a diuretic or spermaceti as a never-failing remedy for "inward bruises," and yet he would be rash indeed who would assert that the practitioner of old was absolutely wrong and that toad powder did not contribute, in a way, to the progress of the science of medicine.

The frequently made assertion that "the Pharmacopeia is the law of the land so that its first valuation and its greatest function is to provide a standard for purity and for strength" is based on a misconception of fact and a misinterpretation of the letter as well as the spirit of the Food and Drugs Act of June 30, 1906, which specifically mentions the United States Pharmacopeia and the National Formulary.

In the discussion on the scope of the U. S. P. no one appears to have been willing to concede the fact that in law, in name and in possible scope these books are equal, with, perhaps, a number of counts in favor of the legality and usefulness of the National Formulary. In this connection we should not forget that, technically at least, the "United States Pharmacopeia" does not as yet exist.

Without going into a detailed discussion of the merits of the two books as an available legal standard it may be permissible to call attention to the Standard Dictionary definitions, as follows:

> *Pharmacopeia:* "A book, usually published by authority, containing the formulas and methods of preparation of medicines etc. . . . ."
>
> *Formulary:* "1. A compilation or collection of forms, formulas, doctrines or precedents. . . . 3. A ritual or formula."

As designating titles for a treatise on medicinal substances the two words are practically synonymous apart from their derivation, one being Greek, the other Latin.

So far as the practicability of developing either book as a legal standard for any and all substances is concerned, it would appear that the owners of the Pharmacopeia are, at least, divided as to the desirability of having their book used exclusively for this purpose, while the owners of the National Formulary are unanimously in favor of providing standards for all articles not included in the Pharmacopeia of the United States.

Thus the American Pharmaceutical Association in deciding on the scope of the National Formulary held that the therapeutics or therapeutic incompatibilities of the National Formulary preparations are not within the province of the National Formulary committee. "The physician may reasonably be expected to know what he wants, and if he chooses to prescribe preparations which are therapeutically incompatible it is the duty of the

pharmacist to supply what is ordered. The Committee on National Formulary feels it to be its duty to supply formulas for medicaments which may be prescribed by physicians, if the demand is sufficient to justify our attention and if an acceptable formula can be devised or obtained."

With the need for developing the Pharmacopeia as an all-embracing standard for drugs and medicines eliminated, and with at least a fair-sized minority of the members of the Pharmacopeia convention opposed to such use, it would appear as though the Committee on Revision would certainly be going contrary to the best interests of the American people in deviating from the time-honored scope and use of the Pharmacopeia.

Physicians have long since recognized that the practice of medicine is not limited to the administration of drugs and preparations of drugs, and that the prevention of disease and the prevention of further spread of disease, when it does occur, are among the requirements that the medical practitioner should not and dare not lose sight of.

With these varied requirements to prepare for it is obviously impossible for the medical student, in the limited time at his disposal, to acquire a working knowledge of all the drugs and preparations which have been used at one time or another, and it would appear that no more important public health measure could be introduced at the present time than the outlining of a therapeutically active materia medica as a basis for the instruction of medical students and for reference by physicians now in practice.

In conclusion allow me to call attention once more to the quotation from the first edition of the Pharmacopeia which asserts that "the value of a Pharmacopeia depends on the fidelity with which it conforms to the best state of medical knowledge of the day. Its usefulness depends on the sanction it receives from the medical community and the public, and the extent to which it governs the language and practice of those for whose use it is intended." Can we, on the eve of the corresponding decade of the twentieth century, do better, or will we do less?

Twenty-fifth and E Streets, N. W.

ABSTRACT OF DISCUSSION

DR. A. S. LOEVENHART, Madison, Wis.: Since the Pharmacopeial Convention left the matter to the Committee on Revision to decide, I think it would be proper for this Section to express its wish that all substances be omitted that have not a recognized therapeutic value and that are unnecessary duplications.

DR. C. S. N. HALLBERG, Chicago: I take decided objection to Mr. Wilbert's statement in reference to the makeup of the Pharmacopeia. I made a special study of the makeup of the European pharmacopeias last year. The British Pharmacopeia is dominated by the Medical Council and there is not a pharmacist on it. The council delegated the revision to Professor Attfield.

The U. S. Pharmacopeial Convention absolutely refused to listen to some of the medical delegates, because they knew that they did not have back of them the practices of 140,000 physicians of the United States. We pharmacists must cater to the physicians who write prescriptions and use medicine. While it is interesting that there are medical men, in Baltimore particularly, who have wonderful ideas on drugs, seldom write prescriptions, and rarely, if ever, prescribe medicine, they have our sympathy, but they have not our real heartfelt thanks, because they do not act as real pharmacologists. To give a concrete example: I have been told that out of Kansas alone last year there were shipped 200,000 pounds of echinacea, nearly every pound of which went into regular and proprietary pharmaceutical preparations, to be used by physicians. Yet the Council on Pharmacy and Chemistry will not admit echinacea to New and Nonofficial Remedies. When such an army of medical men is using it as an antiseptic and astringent, by what right do you say that these men do not know how to practice medicine, or do not know what kind of medicine to use?

DR. A. S. LOEVENHART, Madison, Wis.: If usage is to be the criterion, then Peruna should be in the Pharmacopeia. I claim that we cannot afford to let certain articles go into the Pharmacopeia on the basis of usage. We do not limit physicians; they can use what they wish, but a book that is supposed to represent, as Mr. Wilbert said, the best medical thought and to have the medical profession behind it, must not include drugs on the basis of usage.

DR. C. S. N. HALLBERG, Chicago: After the U. S. P. Convention is past you cannot do anything by any action taken here to influence the committee. The committee of this Section, and I believe the committee of the American Medical Association on the Pharmacopeia, engaged in a campaign for six months trying to test the medical sentiment of this country in order to get crystallized the ideas and bring them before the convention. What was the result? Not one idea did they carry through, because the Pharmacopeial Convention represented the actual state of pharmacy and medicine in this country as near as it could be formulated, and that is why they stuck to the original principles. The Pharmacopeia is for a standard of strength, purity and quality of medicinal substances and gives directions for their preservation, valuation, preparation and compounding, and not one more syllable about it, nor can you, by any stretch of imagination, add another attribute to it, so that I do not see that any good can be accomplished by our expressions of opinion.

DR. F. E. STEWART, Philadelphia: In 1880, this whole subject came up in a discussion with Dr. Squibb, and I remember what he said, and thirty years' experience confirms it, namely: "A large part of the demand for new remedies is a fictitious demand, caused by advertising. Take antipyrin; on account of advertisement it was widely used, but after the patent expired the demand fell flat."

DR. A. S. LOEVENHART, Madison, Wis.: We want the Pharmacopeia to represent the best medical knowledge as to what drugs are useful in the treatment of disease. We would rather let much-used drugs, which are worthless according to general medical opinion, go in the National Formulary and let them be in the hands of the pharmacists who come in contact with the physicians who are handling this class of drugs. Dr. Hallberg states that the United States Pharmacopeia should be a standard for medicinal substances and that it contains nothing about therapeutics. The mere proposition that it is a standard of medicinal substances proves that there is a large element of therapeutics concerned in it. The definition of medicinal substances is: "those useful in the treatment of disease." Dr. Hallberg puts the interpretation that anything sufficiently used by the medical profession is useful in the treatment of disease. I hold that we should accept the best obtainable medical opinion as to what should be included in the Pharmacopeia. That is a simple statement of the difference between us.

Dr. Hallberg has said that the medical profession has lost its chance for the next ten years. I disagree with him: the whole thing is entirely open. The Committee on Revision can include drugs to meet the needs of the people whom it is trying to serve. Now if we, as a part of their constituents, state that we hope these things will not be continued, it will strengthen them to leave out drugs which have been included merely on the basis of usage. With regard to those who shall say what drugs are useful, we can leave them to the general trend of recognized therapeutic value. We must leave to the revision committee to determine by the general trend of medical literature and by methods which they must work out. It should be pointed out that the medical men on the revision committee are in the great minority.

DR. R. A. HATCHER, New York: There is one point that should not be altogether overlooked. There can be little doubt that the controlling influences in the convention are not in favor of restriction. It might be claimed in the future that by silence we gave tacit assent to the program, and I do believe that our protest may have considerable value, although I doubt very much whether it will have a corresponding amount of influence.

DR. C. S. N. HALLBERG, Chicago: The subject is entirely left open to the Committee on Revision, as Dr. Loevenhart states, but those that know the Committee on Revision know that the members have already made up their minds to adhere to those principles which were under discussion, and that the Committee on Revision is certainly not in favor of any radical proposition. Still I do not object to the proposed action, and I think with Dr. Hatcher that it might do some good, if for no other reason than as a matter of record to protest against the admission of some article which might possibly be objectionable.

[The Section voted in favor of the expression of opinion as suggested by Dr. Loevenhart.]

A SIMPLE BLOODLESS OPERATION FOR HEMORRHOIDS*

LOUIS J. HIRSCHMAN, M.D.
DETROIT

It is my intention to give briefly my technic for the removal of certain forms of internal hemorrhoids without the profuse hemorrhage with which this operation is usually associated in the minds of most practitioners. Having observed that most patients suffering from hemorrhoids of the internal variety are more or less anemic from the continued and constant loss of blood, as a result of their hemorrhoidal trouble, I began three years ago to use a technic which would minimize operative hemorrhage and conserve the patient's blood-supply.

With this aim in view, I have developed and have been using a very simple technic which is applicable under local as well as general anesthesia and therefore can be used in those weak, run-down patients suffering from any of the wasting diseases in whom the use of a general anesthetic would be inadvisable if not positively dangerous. The method is adapted to the removal of any variety of internal hemorrhoids and particularly to the pedunculated and prolapsing varieties.

Interno-external hemorrhoids can also be treated by this method. Very few instruments are required and in many cases dilatation of the sphincters is not necessary. The technic under general anesthesia is much the same as under local anesthesia, and inasmuch as local anesthesia is much safer and fully as satisfactory as general anesthesia for this work, I shall describe the operation as I perform it under local anesthesia.

The drugs which may be used for the production of local anesthesia in this region are various. Cocain, eucain, stovain, novocain, alypin and chloretone, as well as their various combinations with other salts, have been used in varying strengths of solution and with varying success by different workers.

During the past six months I have been employing for this operation, as well as in many other operations on the anus and rectum, a sterilized 1 per cent solution of quinin and urea hydrochlorid. I am using this solution, which is prepared from the double salt of quinin and urea (which is made by dissolving quinin hydrochlorid in hydrochloric acid, adding pure urea, filtering the mixture through glass wool and allowing it to crystallize), because of the following advantages over any other anesthetic drug:

First: It is non-toxic and can be given in unlimited dosage. Brewster of Kansas City has used 100 grains intravenously within six hours in a patient suffering from pernicious malaria.

Second: When a solution containing 1 per cent. or over is used the hemostatic effect produced by the deposition and contraction of fibrinous exudate around the blood-vessels is of great value in preventing postoperative oozing.

Third: The anesthetic effect is prolonged; in many cases postoperative anesthesia has lasted from four to five hours to as many days and longer.

Fourth: While equal to cocain in anesthetic power, it has the advantage of being very much cheaper, and is a drug which is almost always available.

One advantage of the operation to be described is the fact that but few instruments are required. Those necessary are: a one-half ounce aseptic hypodermic syringe provided with a fine caliber sharp-pointed needle 2 inches in length, scalpel, pointed scissors curved on the flat, blunt-pointed, long-handled, curved ligature-carrier, my pile forceps, and sometimes a Sims retractor.

The patient is given ¼ grain of morphin about twenty minutes before the operation is to be performed, a soapsuds enema followed by a boracic acid enema is given, and the patient is placed on the operating table in the right or left lateral position. After the region of the anus is washed and sterilized the sphincter is anesthetized by the injection of from 10 to 30 minims of sterile 1 per cent. solution of quinin and urea hydrochlorid. The technic which I employ is as follows:

A point one-half inch below and posterior to the posterior commissure of the anus is selected and touched with a swab moistened with pure phenol. After waiting 2 or 3 minutes, or until this point is thoroughly blanched, the needle of the syringe is passed inward, upward and laterally in a V-shaped direction for about three-quarters of an inch, gradually going down into the sphincter muscle, but not entirely through it. While doing this it is well to pull down the sphincter by the index-finger of the left hand passed into the anus while the injection is being made with the right. From 10 to 20 drops of the solution are slowly injected and the needle is retraced to the point of puncture but not withdrawn. It is then pushed up on the other side in the same manner and this side is likewise injected. Three or four minutes are allowed to elapse to allow the anesthesia to become complete. Then a mechanical vibrator fitted with a cone-shaped vibrator, which has been well lubricated, is gently pressed into the anal orifice. About 3 minutes with the rotary stroke will dilate the sphincter to about the caliber of a silver dollar, which is sufficient to allow the operation to be done in a most satisfactory manner.

It is not absolutely necessary to use the vibrator. In its place one may use the index-fingers of both hands inserted opposed to each other and well lubricated, and by separating them with a gentle massage motion the sphincter may be dilated as satisfactorily in from three to four minutes.

After dilatation has been accomplished, the most dependent hemorrhoid is injected with the 1 per cent. quinin and urea hydrochlorid solution, enough being in-

* Read in the Section on Surgery of the American Medical Association, at the Sixty first Annual Session, at St. Louis, June, 1910.

jected to blanch the hemorrhoid and give it the appearance of a Malaga grape. The lower extremity of the hemorrhoid is then grasped with the pile forceps and pulled down so that it is on the stretch. The long-handled ligature carrier threaded with No. 2 twenty-day, chromicized catgut is passed in through the mucous membrane of one side down to the base of the hemorrhoid and around to the opposite side in such a manner as to include the upper third of mucous membrane covering the pile and the blood-vessels which run longitudinally underneath, but not encircling the whole hemorrhoid as in the old ligature operation. This ligature should be placed just at the juncture of the hemorrhoid and the normal mucous membrane of the rectum. It is then firmly tied, when it will be found that the principal blood-supply of the hemorrhoid has been included in the ligature and shut off. The hemorrhoids on either side are dealt with in like manner and lastly the anterior and upper ones.

A suppository containing orthoform, 3 grains, thymol iodid 3 grains, and quinin hydrochlorid 20 grains, is inserted and the patient kept in the recumbent position for 10 minutes and then allowed to rise from the table. There will be a certain amount of edema or swelling during the first twenty-four hours, but this gradually disappears and is of no consequence. The hemorrhoids gradually shrink until, at the end of three or four weeks, there is nothing left but a small nub of connective tissue which can be painlessly snipped off at any time or left if one so desires.

This, which is the simplest form of technic, is peculiarly adapted to those desperate cases of anemia in which the daily loss of blood from the hemorrhoids is far greater than the patient's blood production. It can be performed in 10 or 15 minutes and involves the least expenditure of endurance on the part of the patient.

In the majority of my cases, when the necessity for haste and conservation of blood-supply is not quite so imperative, I modify the technic as follows:

Anesthetization, dilatation, and ligation are performed as above outlined. The hemorrhoidal tumors are then grasped in order by the pile forceps and incised in their longitudinal axes from a point about one-quarter inch below the ligature and extending down to their distal extremities. After separation of the sides of the incision, the blood-vessels and connective tissue which make up the body of each pile are dissected out *en masse* with the curved scissors and cut off one-quarter inch below the ligature. This longitudinal wound in each case is allowed to remain open and heals in from three to five days without suture. This disposes of the hemorrhoids at once, and does away with much of the swelling which necessarily follows the preceding technic.

In those cases in which there are pedunculated prolapsing hemorrhoids, it is not necessary to dilate the sphincter. After the preparation outlined above, the patient is asked to strain while in the squatting position, or while lying on his side in the Sims position, while the operator is everting and pressing back the anus by manual pressure just outside of the margins of the external sphincters. The same technic as outlined above is carried out in regard to injection of anesthetic, ligation, and excision, and the operation is completed by the insertion of the anodyne suppository already mentioned.

The after-care is very simple. The bowels are kept confined for three or four days; on the beginning of the third day, white petroleum oil is administered in dram doses before meals and at bedtime. This acts in a purely mechanical way, preventing the formation of hard stools and making the movements very easy. A simple soapsuds enema given through a small soft rubber rectal tube on the third or fourth day will start the evacuation of the bowels, which should be encouraged daily thereafter.

The use of quinin and urea hydrochlorid as an anesthetic possesses the great advantage over other drugs, of keeping up postoperative anesthesia of the parts, in many cases, during the entire convalescence of the patient. I consider that with the simple technic just outlined, and this newest local anesthetic, hemorrhoids can be removed without the patient suffering pain either during the operation or following it.

My experience with this technic under local anesthesia produced formerly under injections of 0.1 per cent. solutions of beta-eucain lactate and latterly under quinin and urea hydrochlorid—in all over 300 cases—leads me at this time to offer it to the members of this Section with the hope that it will prove as satisfactory in their hands as it has in mine.

604 Washington Arcade.

A CASE OF PERNICIOUS ANEMIA

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ARCADIA, WIS.

In the following case the patient has been under my observation during the past two years, commencing June 21, 1908. The case is a typical one of the severe type and illustrates the remissions which are so characteristic of the condition and also the manner in which the condition for the time being responds to arsenic.

Patient.—D. N., unmarried, farmer, Irish, aged 58. His father died at 86; his mother died at 73 of pneumonia. Brothers all alive and well; two sisters died in infancy.

History.—He had a broken leg five years ago, otherwise he has always been healthy. He has been an exceptionally hard drinker for a number of years, and is frequently drunk for days at a time. Six months ago he took cold after exposure during a drunken spree and has not recovered. He complains of general weakness especially of the legs, shortness of breath, loss of appetite, sore mouth, dry cough and inability to undergo any ordinary physical exertion.

Examination.—Tall, thin, large frame, skin pale yellowish color; muscles flabby, mucous membranes very pale and gray. Visible forcible pulsation of arterial trunks in neck and abdomen. Teeth poor; no sores in mouth; pulse 80, regular and soft. Soft systolic heart murmur at apex. Arteries very hard; the patient has lost considerable weight, but does not know exactly how much.

Urine Examination: Amount of sample examined, 4 oz. Very pale, clear, specific gravity 1,004, acid; no albumin, no sugar, no bile, no indican, no sediment. He had been drinking beer previous to voiding this sample.

Blood Examination: Red blood cells, 952,000; white blood cells, 2,850; hemoglobin, 30 to 40 per cent. Tallqvist; index plus; marked poikilocytosis. Many macrocytes and microcytes; many megaloblasts and a few normoblasts seen; almost no blood plates; polymorphonuclears decreased; small lymphocytes and eosinophils increased; few myelocytes.

A diagnosis of pernicious anemia was made.

Treatment.—Tincture of nux vomica and tincture of gentian compound were given before meals for stomachic and general tonic with Fowler's solution in ascending doses after meals. The patient was told to stop work and to take full nourishing diet.

Course of Disease.—July 22, 1908: The patient gained 12 pounds and felt much stronger. R. B. C. numbered

2,050,000; W. B. C., 2,375; hemoglobin, 50 per cent.; Tallqvist, no megaloblasts and one normoblast seen.

Aug. 24, 1908: Patient gained 14 pounds in all, felt well and was doing light farm work. R. B. C. numbered 3,760,000; W. B. C., 7,725; hemoglobin, 70 per cent.

Nov. 15, 1908: The patient has gained 23 pounds since beginning treatment, and has been doing regular farm work for the last three months. R. B. C. numbered 3,728,000; hemoglobin, 75 per cent.; no megaloblasts or normoblasts; many macrocytes and microcytes; poikilocytosis. The patient has been taking Fowler's solution continuously until the last three weeks.

Dec. 13, 1908: Patient continues about the same; still doing regular farm work and taking no medicine aside from an occasional laxative.

Feb. 26, 1909: Patient feels about the same. R. B. C. numbered 1,904,000; hemoglobin, 60 per cent. Patient shows the beginning of decline.

April 10, 1909: Patient has been feeling weak again for the last three weeks. Temperature, 100 F.; pulse, 95; mouth feels sore; R. B. C. numbered 1,576,000; hemoglobin, 40 per cent.; few megaloblasts and one normoblast; poikilocytosis. Patient put on Fowler's solution again as before.

From now on patient got stronger and went to work again, and was not seen again until Sept. 16, 1909, when he was weak, short of breath, very pale. R. B. C., 904,000; hemoglobin, 20 to 30 per cent.; marked poikilocytosis, with many macrocytes and microcytes; one megaloblast. Patient put on arsenic again as before.

Nov. 1, 1909: Patient feeling well again; has been in the hospital in bed for the last six weeks. He has been taking Fowler's solution and has gained in weight and strength. R. B. C., 2,224,000; hemoglobin, 60 per cent.; no megaloblasts or normoblasts.

He felt well for some time after this, but did not present himself for further examination. In February, 1910, he began to show evidence of weakness and spasticity in arms and legs. This progressed until by June 1 he was confined to bed almost completely paralyzed. There was loss of control of the bladder and rectum. He became gradually weaker, until he died on June 25.

The severity of the case and the promptness with which the conditions improved on taking Fowler's solution are my reasons for reporting this case.

ADIPOSIS DOLOROSA (DERCUM'S DISEASE) IN MOTHER AND DAUGHTER

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This report of two new cases of adiposis dolorosa will shed no new light on the etiologic factors or treatment. Fifty cases have been reported;[1] eight autopsies have been performed so far. In seven the thyroid was abnormal and in five of them the pituitary body.[2]

Traumatism, toxemia, continued nervous strain, the menopause, alcoholism, syphilis, tuberculosis and various other causes have been duly considered by various observers. So far, in view of the autopsy findings, the abnormalities of internal secretion of the thyroid and pituitary surely play a most important part.

Cheevers reported a case in which a father and a sister were affected, and Hammond made a report of two cases in sisters. In my cases it is a mother with the disease well advanced and of five and one-half years' duration. The daughter has been affected for eighteen months.

Osler[3] has shown us clearly that we must differentiate between adiposis tuberosa simplex, adiposis cerebralis, adenolipomatosis and multiple lipomatosis. Particular care was taken not to confound symmetrical adenolipomatosis with adiposis dolorosa in Case 1.

CASE 1.—(Dispensary No. 21,140. May, 1910).—*Patient.*—Mrs. B., white, housewife, aged 64. Diagnosis: adiposis dolorosa, with anacid gastritis. Family history, unimportant; one sister died of tuberculosis. Four living children, negative to cancer, syphilis or alcoholic excess, insanity, or epilepsy.

Past History.—The patient had the usual children's diseases; no scarlet fever, but she had diphtheria when she was 16 years old. In 1880 she was paralyzed on left side, and again in 1897. She has had severe spells of indigestion for about five years, with almost constant burning pains in her stomach. She is chronically constipated, vomits frequently and has choking spells on lying down. She complains of insomnia, severe pains at back of the neck, in her throat, her legs and over the xiphoid. She is excessively nervous, despondent and low-spirited at times. Her appetite is poor. She complains of "crawling sensations" under the skin.

Examination.—A rather florid woman, 5 feet 3 inches tall, weighing at present 175 pounds. Four years ago she weighed 104 pounds. Examination of head shows nothing. Bilaterally, just above the clavicles are adipose masses, standing out prominently, soft to the touch and painful on pressure. These are ovoid in shape and are about 5 by 9 cm. and 4 by 5 cm. respectively. They do not pit on pressure. A very painful mass is found at about the level of the last cervical vertebræ. This is flat and not as soft as the others. There is another over the xiphoid, and others are found in the axillæ. The upper arms are covered with a thick layer of subcutaneous fat, and the breasts are quite pendulous. The mass over the xiphoid is very painful on pressure, and the patient is conscious of its presence all the time. Careful auscultation and percussion by myself and Dr. G. Wilson show no dulness in the upper thorax, and the heart sounds appear normal. The reflexes are normal. There are small areas of hyperesthesia on both arms and in the region of the neck. The lower abdominal region protrudes, forming an almost hemispherical mass, exceedingly hard, dull on percussion over the whole area. An apron of fairly solid tissue extends in U-shape in front, extending at its lowest point to below the level of the symphysis. Masses of fat in the gluteal region are pendulous. Another mass is present over the sacrum. The thighs and legs are small. There are no lumps. The ankles are slightly edematous. Although the face is florid, with numerous small dilated arterioles, the rest of the skin is fairly soft and white. There are no isolated or general areas of perspiration. The outline of the stomach cannot be made out. Neither spleen nor kidneys can be located. Hands, feet and face are normal, no fat masses. Examination of stomach contents (double test meal) shows no free hydrochloric acid and a total acidity of 30, some mucus, no lactic acid, no Oppler-Boas bacilli. Urine and blood examination negative. Hemoglobin 85 per cent. Blood-pressure 165 mm. 24 hours urine 1275 c. c.

CASE 2.—(Dispensary No. 21,202. May, 1910).—*Patient.*—Mrs. D., aged 42, married, housewife; daughter of Patient 1, height 5 feet 3½ inches; weight 167 pounds (previous weight 100 pounds, a gain of 67 pounds in one and a half years). Diagnosis, adiposis dolorosa, with gastric symptoms.

Previous History.—The patient had the usual diseases of childhood and has had pneumonia four times. She has one child 21 years old. "She was badly torn and had no doctor when her child was born." She has always menstruated every three weeks; she denies any miscarriages. She came to see me because of vomiting spells which started about a year ago. These have become of late almost a daily occurrence. She has severe headaches and menstruation is very painful. She has pains in the back of her neck and pains in the legs and thighs. She feels cold all the time, and wears heavy clothing even in summer. She seldom perspires; her skin is yellowish. She has worn a pessary for a long time, and has a retroflexed uterus and a very weak perineum. Nursing her mother when she was

1. Price, G. E.: Am. Jour. Med. Sc., May, 1909.
2. Stern, H.: Am. Jour. Med. Sc., March, 1910.
3. Osler: Practice of Medicine, 1909.

paralyzed was a great strain on her, and her mother's present state of health is another burden.

Examination.—Stomach contents show free hydrochloric acid absent, total acidity 30, but no apparent atonic condition; some mucus, no lactic acid or Oppler-Boas bacilli. The bowels move every day without aid. The reflexes are normal; the pupils react to light and accommodation. Head, thoracic and abdominal examinations negative. There is one large, soft lipomatous mass over the left collar bone and a smaller one (9 by 5 cm.) on the opposite side, standing out clearly. These are painful and do not pit on pressure. A mass at the back of the neck is extremely sensitive to touch and pressure. The patient has the sensation of some live moving thing in the occipital region. She exhibits in a less marked degree, however, the same neurotic symptoms first observed in her mother. Examinations of blood and urine show nothing. Blood-pressure 149 mm. Hg; hemoglobin 80 per cent.

CONCLUSIONS [4]

If a diathesis existed in the daughter, and nervous strain is considered of etiologic importance, worry over her mother's ill health may have some bearing on her present condition. She took complete charge of her mother during the two paralytic attacks. Then it appears that the birth of her child caused extensive trauma, which is considered by some as of importance.

Most insistent but guarded questioning failed to elicit any past luetic history, in both cases, any miscarriages or any knowledge of a family history of epilepsy or goiter. Alcoholic excess can safely be excluded here as a possible causative factor. Four attacks of pneumonia and diphtheria in the mother, also the two later paralytic attacks, are to be considered.

These two cases are mild, but the symptoms are marked, much more so in the mother, however. In Case 2 the disease has occurred before the menopause. (One case in a patient as young as 12 years of age is on record.) The two hemiplegic attacks occurring in Case 1 would suggest a sclerotic condition not found present in the peripheral vessels.

Although there was a marked increase in weight in both cases, it does not appear in Case 1 to be the adiposity which Marburg found at autopsy to be associated in his case with a tumor of the pineal gland. I cannot account reasonably for the two attacks arising from a general pituitary involvement. In neither case does the thyroid exhibit macroscopic changes. The masses in the older woman are not nodular, but are firmer and less sensitive than in Case 2.

The gastritis, which was real in both cases, with age and poor mastication as predisposing factors, responded to treatment (lavage, diet, strychnin sulphate, etc.). The blood-pressure is high in both cases.

The asthenia, the gastric disturbances, areas of hyperesthesia, and the frequent attacks of melancholia, with the physical findings, convince me that we are dealing with true adiposis dolorosa.

Surgical aid has been attempted.

In one case the removal of the breasts and later a mass from the axillæ was followed, for a time at least, by cessation of the distressing local symptoms.

Most observers agree that thyroid extract is a benefit in some cases. Price has seen five patients out of seven distinctly benefited by its use. The present knowledge of the pituitary is too limited to make its use of therapeutic value. Salicylates and bromids are of use. Massage of a gentle nature is advocated by some and a properly regulated exercise and diet should be insisted on in all cases.

Most patients are obese; the heart often requires attention. The agencies suggested are of doubtful permanent benefit and until the etiologic factors causing this distressing pathologic condition, with the accompanying neurosis and psychic disturbances so markedly illustrated in most cases are discovered, we are working more or less in the dark. It is a satisfaction to know, however, that one positive cure has been brought about by the use of thyroid extract.[5] In all, about 50 cases have been reported.

NOTE. (Sept. 21, 1910).—Patient 1 has lost weight (19 pounds in four months) is less nervous, and in a better general state of health than formerly. The "lumps" have not decreased in size, but are not so sensitive as before thyroid extract treatment was instituted.

Patient 2 shows no improvement after four months' treatment, except that lavage, diet, etc., have bettered the gastric distress. She has gained in weight. The "lumps" are as sensitive or painful as before treatment began.

4. For a comprehensive review and detailed description of symptoms, see Frankenheimer, J. B.: Adiposis Dolorosa, THE JOURNAL A. M. A., March 28, 1908, p. 1012.

5. Price (Am. Jour. Med. Sc., May, 1909) cites the report of Dercum on this point.

ANAPHYLACTIA

A PHENOMENON CAUSED BY THE PROTEINS OF TOMATOES, CRABS, BERRIES, BIVALVES, EGGS AND OTHER FOODS. A PRELIMINARY NOTE

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Without discussing, in this brief paper, the so-called "serum-disease" of von Pirquet, and other phenomena of anaphylaxis described elsewhere, such as the anaphylactic attacks in hay-fever, after tuberculin and the like, I wish to make this preliminary report with regard to another anaphylactic disease.

When some foreign protein is first injected into, or invades, man or other animal, it makes him susceptible to a subsequent injection of the same substance. There is no outward or tangible manifestation of this first injection, but the sensitizing effect is distinctly noticeable when the injection is repeated.

This second injection may show itself as a violent shock, or in the form of respiratory disturbances, dyspnea, edema, tonic muscular spasms, joint effusions, glandular swellings, albuminuria, hyperemias, or urticarial skin eruptions. Any one of these signs, or many of them, may be observed after the second dose of protein.

The causes of the various urticarial diseases are usually classified as predisposing, external, and internal. The predisposing causes have been called "susceptibility," "indigestion," "infancy," "rickets," "jaundice," etc.

Nettles, jelly-fish, mosquitoes, wasps, caterpillars and "bugs" are among the external causes.

Internal causes are foods such as mussels, crabs, lobsters, berries, worms, mushrooms, oatmeal, tomatoes, pork, or even egg-white.

The curative treatment is to remove the offending dietetic irritant.

Now, it is my assumption that certain individuals are sensitized to tomatoes, grapes, berries, or other specific protein, and that the absorption of their particular protein from the food brings on an attack. Since in

certain cases in which antitoxic horse-serum is repeated in a second dose all of these urticarial eruptions, even angioneurotic edema, have been at various times reported, there is every reason to believe that these rashes are signs of anaphylaxis.

One individual may pass through different degrees of prophylaxis (immunity) alternately with states of anaphylaxis. Thus a tomato may at one time cause no symptoms, at another time in the same individual, erythema multiforme; again angioneurotic edema.

Accordingly, those persons subject to urticarial eruptions from a definite food may be regarded as sensitized to that protein. If the proteins absorbed from the digestive tube inaugurate an attack, they are in a state of anaphylaxis.

These phenomena of hypersusceptibility to food proteins may be congenital, acquired or inherited.

The recognition of the offending protein, whether its invasion is by mouth or by injection, whether it is by the olfactory route or by the circulation direct, is of such clinical importance that internists dare no longer ignore the applications of our present knowledge of anaphylaxis.

There is another example of the clinical application of this anaphylactic reaction which I must mention before concluding this paper. It has never been recognized before. In all of the dermatologic clinics of seacoast or river towns there is seen, in the crabbing season an erythematous, progressive cellulitis of the hands, due to abrasions from the shells of crabs, lobsters and other shell fish. Hundreds of persons are scratched, injured and "bitten" by crabs, yet only about one-tenth of one per cent. of those bitten show this erysipeloid eruption. It spreads from the point of the finger or hand scratched, steadily, just like its more dangerous analogue, erysipelas.

Dr. T. Caspar Gilchrist studied a number of these cases bacteriologically and found them sterile. There was no associated micro-organism. "Crab-hand" has been a mystery, as far as its immediate etiology is concerned.

When we realize that such a small number of those exposed to this shell reaction really exhibit it, and when all of the other factors associated are taken into consideration, I believe it will be agreed that the condition fits in exactly with what we should expect from those persons who are supersensitive to shell proteins. Two experiments that I had the opportunity of performing this summer go far to verify this. They, with others, will be published in another paper.

It is always a specific condition. Persons subject to anaphylactic shock from crabs are not affected by berries, and *vice versa*.

A further study of this new disease is yet to be completed. We are now isolating the proteins of various dietetic articles and administering them to susceptible persons. The complete results of this work will shortly be published.

1937 Madison Avenue.

Benefits of Anesthesia.—Without a reliable anesthetic where would our surgeons be? We would hear nothing of the wonderful work they are doing. They would be groping in the dark and performing only the minor work—opening boils and an occasional amputation. But to-day, thanks to a drug that robs the patient both of the sense of pain and consciousness, the surgeon unhesitatingly dares to attack the most vital parts of the body.—W. A. Onderdonk, in *American Practitioner and News*.

THE SURGICAL IMPORTANCE OF ACCESSORY RENAL ARTERIES*

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DAVID C. STRAUSS, M.D.
CHICAGO

Under normal conditions each kidney is supplied by a single renal artery which arises from the side of the aorta, a little below the origin of the superior mesenteric. Each renal artery, before reaching the hilum of the kidney which it supplies, divides into from three to five branches, which enter the substance of the kidney independently at the hilum.

The primitive kidney is a segmental organ, and its primitive vessels are probably segmental, *i. e.*, one artery for each segment, so that the persistence of the embryonic condition would mean that each kidney, instead of being supplied by a single renal artery, might receive from two to five renal arteries. Such supernumerary vessels represent a primitive condition, and the accessory arteries may arise close together from the aorta, or their points of origin may be widely separated.

The varieties of accessory arteries which most frequently occur are:

TYPE 1 (Fig. 1).—Two separate renal arteries arise from the side of the aorta to supply the kidney. The two arteries enter the hilum of the kidney, dividing, just before doing so, into two or more branches. This variety may be called the *two-artery type*.

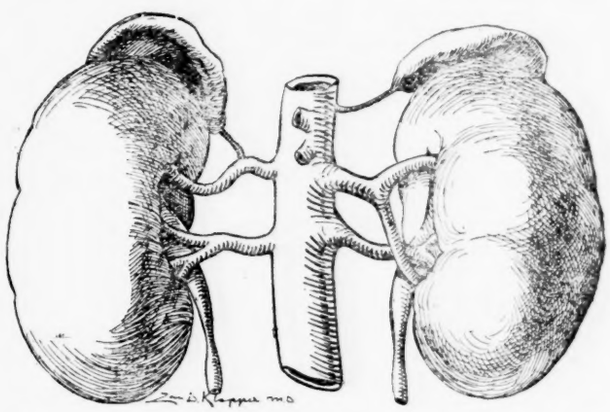

Fig. 1.—Type 1 of accessory arteries. Two separate renal arteries passing to hilum from aorta.

TYPE 2 (Fig. 2).—A main renal artery arises from the aorta in the normal manner, but a second, *i. e.*, accessory, artery arises from the aorta a variable distance away, passing directly from the aorta to the upper pole of the kidney. This may be called the *superior polar type*.

TYPE 3 (Fig. 3).—The main renal artery arises from the side of the aorta and passes to the hilum in the normal manner.

An accessory renal artery arising separately from the aorta a variable distance from the main trunk passes to the lower pole of the kidney. This is called the *inferior polar type*.

TYPE 4 (Fig. 4).—Three renal arteries arise from the side of the aorta and pass separately to the hilum of the kidney. This is called the *three-artery type*.

TYPE 5.—Four renal arteries arise from the aorta and pass separately to the hilum. This is called the *four-artery type*.

TYPE 6 (Fig. 5).—The accessory artery, instead of having its origin from the aorta, close to the main renal trunk, arises from a vessel at times quite distant from the normal renal artery, most often from the common, external or internal iliacs, rarely from the hepatic, middle sacral, spermatics, in-

*Read at the annual meeting of the American Urological Association, St. Louis, June, 1910.

ferior phrenic, lumbar or even pancreatic or colonic arteries. This may be called the *extra-aortic accessory type*, and is quite rare as compared with the previously described types.

TYPE 7.—Superior or inferior polar branches arise from a single, *i. e.*, normal, renal artery just before it divides to enter the kidney.

These vessels may be called *pseudo, or false accessory, i. e.*, not arising from the aorta. They are of less importance than the true accessory vessels.

Although anatomists have known for many years that such accessory arteries are frequently found, their surgical importance is just beginning to be appreciated. Surgeons have become aware of the fact that accessory renal arteries may not only be the cause of pathologic conditions, *e. g.*, hydronephrosis, but that they may play an important part in producing serious, if not fatal, complications during or after operations on the kidney, such as nephrotomy or nephrectomy. But few books on anatomy in any language, and scarcely a single treatise on general or renal surgery mention the possibility of the presence of such accessory arteries.

The majority of anatomies, such as those of Hyrtl, Henle, Partsch, Sobotta, Poirier and Charpey, Broesike, Lernow, Bardeleben, Joessel, Deaver, Morris, Gerrish, Testut and Langer, either do not mention the occurrence of accessory renal arteries or state that they are of no practical importance.

In the standard atlases, like those of Henke, Bardeleben, Zuckerkandl, Spaltcholz, Toldt, Sobotta, and Heitzmann, no illustrations of such an anomaly are shown.

Cunningham, Quain, Gray and Piersol describe the occurrence of accessory arteries, Quain stating that they are found in 20 per cent. of bodies. The best description is that given by Piersol:

> Accessory renal branches may arise from the abdominal aorta or from the middle sacral, common iliac, internal iliac or the inferior mesenteric. These accessory arteries frequently enter the substance of the kidney elsewhere than at the hilum.

The only reference to these accessory vessels in the books on renal or general surgery are in Schede's chapter in the von Bergmann "System," and in Garrès, Israel's and Albarran's books. Schede says that variations of the renal artery may be of surgical importance and that search should be made for separate vessels entering the upper or lower poles. Preliminary ligation of these accessory arteries is advised.

Garrè simply mentions the presence of double or triple renal arteries and advises ligation of an accessory artery passing to the upper pole, when found during a nephrotomy. He calls attention to the fact that hemorrhage after nephrotomy may be due to such accessory vessels.

Israel does not describe any variations of the renal artery, but refers to the rôle which an accessory artery to the lower pole may play in the production of hydronephrosis. In the chapter on nephrolithotomy he refers to the fact that persistent bleeding may be due to accessory polar arteries, which have either not been compressed during a nephrotomy, or from which postoperative bleeding occurs after the heart has regained its activity. He describes a case in which there was an insignificant hemorrhage from the upper pole during a nephrolithotomy, even after a rubber ligature had been placed around the pedicle. After the patient's return to bed a severe hemorrhage occurred, whose source was found at the upper pole, necessitating nephrectomy.

At the 1909 meeting of the French Surgical Association, Pasteau reported a case in which a severe hemorrhage occurred after a nephrectomy, due to overlooking an upper pole artery. He found anomalous arteries in 20 per cent. of eighty-two cases. In one case there were six renal arteries.

The polar arteries are often mistaken for adhesions, and are thus easily torn.

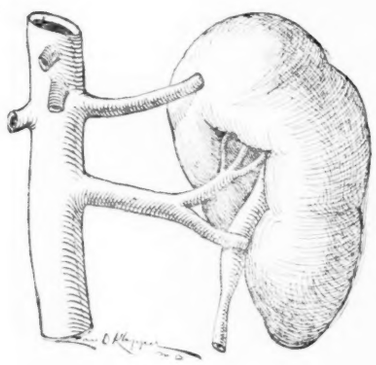

Fig. 2.—Type 2 of accessory arteries. Large artery passes from aorta to upper pole of kidney.

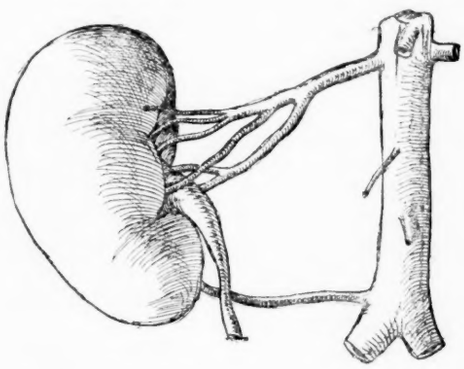

Fig. 3.—Type 3 of accessory arteries. Large artery passes from aorta, close to bifurcation, to lower pole.

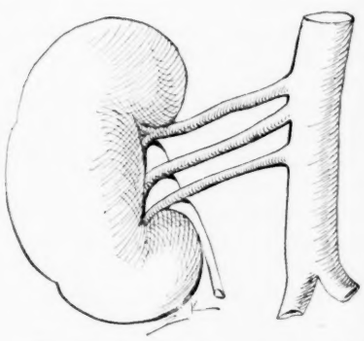

Fig. 4.—Type 4 of accessory arteries. Three separate arteries pass from aorta to hilum of kidney.

The only articles which give any accurate information as to the frequency of occurrence of the different anomalies are those of Brewer, Thomson and Seldowitsch, which will be referred to in connection with our own work.

We became interested in the subject of accessory renal arteries after having had a case of very severe postoperative hemorrhage from an overlooked inferior polar artery following a nephrolithotomy. The bleeding occurred after the patient's return to bed, as in Israel's case.

Believing that a knowledge of the frequent occurrence of accessory renal arteries should be more general, we desire to add our observations as to their frequency to those of Brewer, Seldowitsch and Thomson. During the past winter, through the kindness of Dr Bensley of the University of Chicago, Dr. Ransom of Northwestern University, and Dr. White of the University of Illinois, we dissected the kidneys in 100 cadavers, *i. e.*, 200 kidneys, and made the following observations as to the frequency of occurrence of accessory renal arteries:

TABLE 1.—ACCESSORY RENAL ARTERIES

Number of kidneys examined	200
Accessory arteries (true), (See Figs. 1 to 5 incl.) (Types 1, 2, 3, 5 and 6)	28
Superior polar arteries from the single renal (pseudo-accessory, Type 7)	19
Percentage of true accessory arteries	14
Percentage of normal renal arteries	86

TABLE 2.—TYPES OF TRUE ACCESSORY ARTERIES

Type 1.—Two separate arteries from the aorta to hilus..... (a) right, 7; (b) left, 5; (c) both sides, 2.	14
Type 2.—Inferior polar artery from the aorta..... (a) right, 4; (b) left, 2; (c) both sides, 1.	7
Type 3.—Superior polar artery from the aorta..... (a) right, 2; (b) left, 3.	5
Type 4.—Three renals from aorta.....	0
Type 5.—Four renals from aorta.....	1
Type 6.—Accessory from iliac (common or external or internal)	1
Type 7.—Superior polar artery from a single renal artery..... (a) right, 8; (b) left, 5; (c) both sides, 6.	19

TABLE 3.—PERCENTAGE OF NORMAL AND ACCESSORY RENAL ARTERIES

Observers.	Number of Kidneys Examined.	Normal Arteries, Percentage.	Accessory Arteries, Percentage.	Two Renals, Percentage.	Superior Polar, Percentage.	Inferior Polar, Percentage.	Three or More Renals, Percentage.	Accessory, Common Iliac Percentage.
Thomson	419	74.4	25.6	7.6	6.9	4	4	0.9
Brewer	302	71.9	28.1	22	†	†	6.1	..
Seldowitsch	300*	82	18	9	1.3	2.7	2	..
Eisendrath & Strauss	200	86	14	7	3.5	2.5	0.5	0.5

* Only male cadavers. † Not mentioned.

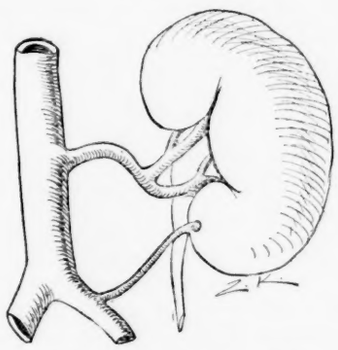

Fig. 5.—Type 6 of accessory arteries. The accessory artery has its origin from an extra-aortic artery, like the common or external iliacs.

A comparison of these statistics shows that abnormal, *i. e.*, accessory, arteries occurred in about 21 per cent. of over 1,200 kidneys. In other words, one can expect to find such accessory vessels in about one out of five kidneys. The most common form of accessory vessel is a second renal artery arising separately from the aorta, as shown in Figure 1. Next in order of frequency are the superior polar, the inferior polar and the remaining types shown in Figures 2 to 5.

This question of the presence of supernumerary renal arteries is not only of interest from an anatomical standpoint, but will be of constantly growing importance in its bearing on renal surgery.

Israel, Ekehorn, Mayo and Braasch have called attention to the rôle which an accessory artery passing from the aorta to the lower pole of the kidney may play in the production of hydronephrosis through kinking of the ureter across such an accessory vessel.

The purpose of our investigations was to direct attention especially to the possibility of severe hemorrhage occurring from such accessory vessels, either during the performance of nephrolithotomy or after the patient has returned to bed. No doubt many cases of serious and in some cases fatal hemorrhage have been due to bleeding from such accessory vessels, especially those passing to the upper or lower poles. In future it would be advisable, before incising a kidney for the removal of renal calculi or performing a nephrectomy for any condition, to examine the upper and lower poles and the hilum of the kidney for the presence of any supernumerary arteries. If such vessels are found, it is advisable to ligate them separately from the main renal pedicle.

So far as our investigations show, the condition is present as often on one side as on the other.

103 State Street.

GANGRENE OF THE LUNG WITH TRICHOMONAS INTESTINALIS AS THE ONLY APPARENT ETIOLOGIC FACTOR

REPORT OF A CASE

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The literature in relation to the trichomonas is rather extensive, but relates to the intestinal, urinary and vaginal tracts almost entirely. Observers have noted it in connection with chronic diarrhea, cystitis without bacteria, and rarely with pulmonary abscess and gangrene.

Instances of the invasion of the respiratory tract by mastigophora are very few, so that the report of a case of gangrene of the lung in which the trichomonas was the only discoverable etiologic factor may find a place in the rather scanty records of pulmonary disease due to or associated with this protozoon.

The general consensus of opinion seems to be that the trichomonas is not capable of producing disease *de novo*, but that a previous injury to the tissues must have taken place, and that in such cases only can it play an active part in pathogenesis.

This is the evidence in the report of the following case:

History.—The family, personal and social histories present nothing pertinent to the case of the patient, Private E. C. He had had chills and fever in July, 1909. On June 21, 1910, he was admitted to the post hospital with the same trouble, diagnosed and treated as tertian malaria, and was discharged as cured July 3, 1910. In the winter of 1909-10 he injured the left side of his chest by falling on the pommel of his saddle while mounting his horse and was confined to the hospital for a week.

Present Illness.—July 10, 1910, the injured side began to give him trouble under severe drill, and two days later he began to have a great deal of pain in the left side, and felt sluggish. He also had headache and dull ache over the root of the left lung, which continued throughout the illness. On admission, July 15, 1910, besides the pain, he felt weak and was expectorating blood-tinged sputum.

Examination.—Temperature was 101.8 F., respirations 20 and pulse 80 per minute. There was an area or dulness between the left anterior and posterior axillary lines extending from the third to the fifth rib. Coarse bubbling râles were heard throughout the left chest; otherwise the physical signs were negative. The blood, urine and feces were normal; the latter contained no parasites. The sputum was thin at first, white, with blood-streaks, later much increased in quantity, dark, rusty, prune-juice color and foul odor. It contained elastic tissue, masses of epithelial cells, Charcot-Leyden and hematin crystals. Besides a few bacteria, there were numerous actively motile trichomonades.

During the first twenty-four hours the sputum amounted to but 1 fluid ounce or so, but during the course of the disease it increased to between 3 and 4 fluid ounces per day. During the last week of the disease the amount of sputum gradually lessened, the foul odor disappeared and the quantity of blood in it was reduced until there were only a few cor-

puscles present. In every examination numerous active trichomonades were noted until the last week of the disease, during which they gradually decreased in number and lost their motility. There were still a few present in the sputum on the day of the patient's discharge (August 5, 1910) from the hospital. At no time were there more than a few bacteria present in the sputum.

Course of the Disease.—At no time during the patient's confinement in the hospital did the temperature rise above normal after the first twenty-four hours, but ranged between 97.6 and 98.5 F. The pulse and respiration were normal throughout. The sputum and pain in the side and over the root of the left lung were the only noteworthy symptoms, and on discharge (August 5, 1910) only a slight soreness over the root of the lung remained, the foul and bloody sputum and the pain having quite disappeared. The patient has reported twice since discharged, at intervals of a week, for observation, and at the last visit seemed to be in perfect health.

THE NON-OVIPAROUS FEMALE HOOKWORM*

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NASHVILLE, TENN.

In every higher animal we recognize certain more or less definite periods of physiologic activity, and we roughly divide the span of life into three stages, which are in no way sharply outlined. These we call the stages of youth, adolescence, and old age. Youth, characterized by a high degree of vitality, is the period of rapid cell multiplication and growth; organs are formed and perfected, functions are unimpaired and active, and the body is a perfect living thing. The second period is characterized by functional and sexual maturity; the multiplication of tissue cells is less rapid; the organs strengthen and their functions are more perfectly correlated; growth comes to an end. In the perfected animal it is a period for perpetuation of the race, and in conformity with this great function sexual differentiation is fully established. The third period, old age, brings a marked change, the potential of vitality wanes; degenerations of all kinds appear, and cumulative weakness ends natural death. These three periods are all characteristic of all of the higher-celled animals, the last period being rarely seen in nature, because in the wild animals a violent death follows the early functional weakening and inability to fight off enemies (Calkins).

Do we find the same sequence of physiologic changes in the lower many-celled animals, and can we distinguish periods of youth, maturity and old age? Since the fundamental biologic laws are much the same, on *a priori* grounds alone we should expect to find the same series of changes in the lower metazoa and likewise in the protozoa.

Of late I have been greatly interested in the study in the development of the *Uncinaria americana* with special reference to the non-oviparous female, endeavoring to ascertain whether their inability to produce eggs is due to the "old age period" or to other influences not attributable to senile degeneracy. It is affirmed by Bass that more than 7 per cent. of females out of the 247 dissected by him failed to produce ova. He maintains that during the latter third of their existence they cease to lay eggs. This observation, if substantiated, is of paramount importance for the reason that individuals may be harboring the worm though no ova can be found in their stools.

The limited amount of work that I have done along this line does not correlate with the result of Bass's investigations, as shown from the examinations of specimens obtained from cases coming from the Tennessee Industrial School. At this juncture I wish to express my deep indebtedness to Dr. Thomas Weaver, the physician in charge, for the privilege of studying these cases. Children are brought here from practically every county in the state and are kept under surveillance until they have attained their majority. So far as we could ascertain, there is no evidence that the disease has ever been contracted in the institution. Ground-itch, dew-poison, etc., are unknown among them and the water-supply is perfectly pure. This offers a fruitful field of research for ascertaining just how long the infection may have persisted in a given case and likewise in determining the oviparous and non-oviparous females, with especial reference to their ages. The report in detail follows:

CASE 1.—L. D., a girl, aged 17, admitted March 8, 1899, from Putnam County; eleven years in the institution without interruption; two treatments by thymol (on Feb. 15, 1910, and March 18, 1910) recovered 27 hookworms—22 females and 5 males; all of the females contained many eggs.

CASE 2.—M. G., a girl, aged 18, admitted from Rutherford County; thymol treatment recovered 19 hookworms—13 females, 6 males. The females were all oviparous.

CASE 3.—M. C., a girl, aged 9, admitted May 27, 1905, from Overton County. Only 1 hookworm recovered by thymol. This worm was an egg-bearing female.

CASE 4.—R. S., male, aged 18, admitted Feb. 12, 1904, from Pickett County; six years in school. Three courses of thymol given (March 4, 1910; March 11, 1910, and March 17, 1910). Forty-five hookworms—36 females and 9 males—were recovered. All the females contained many eggs, except one. This non-oviparous female was of average size and, so far as could be ascertained macroscopically, was perfectly normal. Microscopically, the vulva was abnormally situated just in front of the lower two-thirds of the body. The two uterine and ovarian tubes were observed to be quite atrophic, and very much shorter than normal.

CASE 5.—D. C., a boy, aged 13, admitted May 13, 1909, from Blount County. Thymol treatment recovered 18 hookworms—13 females and 5 males. All the females were oviparous.

CASE 6.—F. M., a boy, aged 16, admitted July 13, 1909, from Davidson County. Thymol treatment recovered only 1 oviparous female.

CASE 7.—W. D., a boy, aged 12, admitted Jan. 1, 1910, from Cannon County. Thymol treatment revealed only 1 oviparous female.

CASE 8.—F. C., a boy, aged 16, admitted Feb. 10, 1910, from Scott County. Thymol treatment recovered 3 oviparous females.

CASE 9.—K. B., a girl, aged 9, admitted July 1, 1908, from Macon County. Thymol treatment recovered 2 oviparous females and 1 male.

CASE 10.—B. J., a boy, aged 14, admitted Jan. 25, 1909, from Greene County. Thymol treatment recovered 2 oviparous females and 1 male.

CASE 11.—L. M., a girl, aged 13, admitted Dec. 28, 1907, from Lawrence County. Thymol treatment recovered 7 oviparous females and 4 males.

SUMMARY

In summarizing the above cases it will be seen that 132 worms were recovered and examined—101 females and 31 males. Only one non-oviparous female was ob-

* From the Pathological Laboratory of Vanderbilt University, Medical Department.

served out of the entire number. The patient from whom the non-oviparous female was obtained has been in the institution for six years (Case 4). We can assume that the worms recovered from this patient are over six years of age, since there has been no evidence of infection while in the institution. Of absorbing interest is Case 1, possibly the longest infected case on record, Dr. Stiles (personal communication) related two cases in which the infection lasted about eleven years. Our patient has been constantly present at the institution for over eleven years and no outside source of infection was possible.

It is generally conceded that the average infection will last three or four years; the worms die or become dislodged from their firm attachment and are then passed out by the bowel. Two thymol treatments in Case 1 dislodged 27 hookworms—22 females and 5 males. Every female contained enormous numbers of ova. It is evident from the above case that the worms are more than eleven years old. Notwithstanding their extreme age they appear to be producing as many eggs as in the prime of life. This case, however, cannot be taken as a criterion, since it may be an exception rather than the rule.

About two years ago I recovered 89 worms from a patient giving a history of having had the disease a little more than one year. Recently I examined these worms and found 66 to be females and 23 males. Three of the 66 females proved to be non-oviparous. The history of the case follows:

CASE 12.—A boy, 12 years old, had always lived in Massachusetts except for the past year and a half. He had always been healthy and energetic. The family moved from Massachusetts to South Carolina in the early spring of 1907. During the summer the boy went barefooted and contracted ground-itch on two different occasions. Several months later he appeared not to be as well as usual, and throughout the winter months he exhibited a marked lack of energy, lassitude, and stood very poorly in his classes at school. Anemia was present, but was not very marked. In June, 1908, the family moved to Atlanta, and came to Nashville in November, 1908. The case came under my observation several weeks later. Examination of the blood showed red cells 4,115,000, hemoglobin 85; whites, 9,200. The differential leukocyte count revealed 17 per cent. of eosinophils. The increase in eosinophils led me to suspect uncinariasis, so the stools were examined, with the result that a great many hookworm ova were found. Thymol was given, which expelled 67 worms, 53 of which were females and 14 males.

One week later, another course of thymol was given, with the result that 19 worms were obtained—10 females and 9 males. Two weeks later, another course of thymol was given, which expelled 3 females. After this, repeated examinations of the stools failed to show the ova. The patient rapidly improved, and three months after the last treatment, was as healthy and robust as he had always been before the infection.

The unique feature in this case was the finding of three non-oviparous females out of 66 worms, which gave a history of being less than one and one-half years old. From this case it is evident that comparatively young females may be incapable of egg production.

I am of the opinion that the non-oviparous nature of the female is not entirely due to the "old-age period," but is, in all probability, caused by some defects in development, or occasioned by peculiarity in a given strain. Definite conclusions, however, are not warranted, as evidenced by the paucity of the material at hand. Further observations by the writer along this line will be forthcoming in the near future.

CULTIVATION OF ADULT TISSUES AND ORGANS OUTSIDE OF THE BODY*

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AND
MONTROSE T. BURROWS, M.D.
NEW YORK

The solution of many problems of human pathology depends, in a large measure, on the finding of the still unknown physiologic laws of generation, growth and evolution of cells. We must, therefore, develop new methods which permit the discovery of these laws. A few weeks ago, we began to investigate systematically one of these future methods, namely, the cultivation of adult tissues outside of the body. The starting point of our researches was the beautiful work of Harrison on the embryonic tissues of the frog. Some years ago, Harrison observed the development of nerves from the central nervous system of frog embryos cultivated in a drop of lymph. In 1910, Burrows studying with Harrison improved very much this method and adapted it to embryonal tissues of warm-blooded animals. He succeeded in cultivating nerves and mesenchymatous cells of sixty-hour chick embryos.

Then, at the Rockefeller Institute, we tried to develop on this basis a general method which would be applicable to the adult tissues of the mammalia and thus to determine some of the laws of cellular physiology.

The experiments on which we wish to report now were performed on dogs and cats and an adult frog and consisted of extirpating small fragments of tissues of an animal, inoculating it aseptically into a plasmatic medium taken from the same animal, and sealing the materials in hollow glass slides. The slides were placed in an incubator, maintained at a constant temperature of 37 C. The microscope was also placed in a special thermostat which was kept at this temperature. The growth of the cells could, therefore, be observed, over a period of time, with the microscope, kept itself at the body temperature, and the multiplication of cells directly seen.

GENERAL CHARACTERS OF THE GROWTH

The plasmatic media were inoculated with many tissues or organs, of which all were found to multiply or grow. The cultures of the different tissues—as we shall call them—contain common characteristics. The time of the beginning of cellular proliferation depends on the nature of the tissue, the age of the animal and other more or less important factors. In the cultivation of glandular organs of adult dogs, the vegetation starts after thirty-six or forty-eight hours. But, if the young animal is only a few days old, new cells appear in the culture after ten or twelve hours. Four or five days after the inoculation of the medium, the cultures of thyroid, kidney, suprarenal, etc., are in full activity, and remain in this condition as long as the medium allows it. Tissues like cartilage or peritoneum grow, at first, very slowly. After three days, there are in the cultures very few new cells. But about one week after the inoculation, the cultures become very much more active, and are in full vegetation after about nine or ten days. There is also some analogies between the morphologic characters of the cultures of various tissues

*From the Laboratories of the Rockefeller Institute for Medical Research.

and organs. For all tissues, the first indication of growth is the appearance on the edges or the surface of the specimen of a few small and regular granulations. These granulations consist of the cytoplasm of cells, the nucleus and nucleoli of which soon become visible. The cells belong to two general types, spindle and polygonal. The spindle cells appear ordinarily at first and their morphology is about the same in all tissues, bone marrow or kidney, thyroid or cartilage. They are long and slender and radiate from the fragment of tissue or organ through the plasmatic medium. They are derived probably from the connective tissue framework of the organ. At the same time, or a little later, the cells of the second type appear. They are polygonal or multipolar cells in form, but their morphology varies widely according to each tissue and organ. They seem in part to be differentiated cells of epithelial nature. Cartilage produces cartilaginous cells, and thyroid generates cells which look like thyroid cells. Even in the renal cultures, this second type of cells congregates in tubular formations. By using a suitable technic, we can control the growth of one or another of these types. A small fragment of thyroid cleanly cut produces mainly spindle cells, while in tissues more finely divided (scrapings), epithelial-like cells appear.

In the first part of the work we found and studied the growth of adult tissues outside of the body. In the second part we attempted to cultivate thyroid cells in series, and also to activate the growth of a tissue by passage from one plasmatic medium to another. Connective tissue, cartilage, peritoneum, bone marrow and bone, skin, thyroid gland, spleen, suprarenal gland, kidney, ovary and lymph gland, were all cultivated successfully.

CULTIVATION OF TISSUES

Arterial Sheath.—Three days after inoculation of a fragment of arterial sheath, very delicate palm-like cells appeared on the edge of the tissue and ramified through the plasmatic medium in long filaments ending in spindle cells. Vegetation was very weak and stopped entirely after a few days.

Connective Tissue.—Most of the cultures of connective tissue remained inactive.

Conjugal Cartilage.—This started also to grow on the third day. For about one week, very few spindle and spider like cells were found slowly wandering along the edges of the cartilage. From the upper pole of the fragment of tissue, a mass of new cartilage protruded and invaded the plasmatic medium. After a few days, it became so large that it could be seen by the naked eye. Progressively, the rate of growth became faster. Many irregular cells with long arms now appeared in the plasma about the old cartilage.

After nine days, the culture was in full activity, and the old cartilage had thus generated outside of the body a piece of new cartilage two millimeters long.

Peritoneal Endothelium.—This underwent also a slow evolution. For several days, there were only a few beautiful and irregularly-shaped cells along the edges of the tissue. After a week they began to multiply more actively and many very large cells resembling endothelial cells slowly moving through the clear plasmatic medium were directly observed under the microscope. On the twelfth day, the culture was still in full vegetation.

Bone.—During the first hours of the cultivation of fragments of bone marrow and bone, the anatomic elements began to wander away from the tissue. After three or four days, the little pieces of bone hidden in the bone marrow became visible, because almost all the cells had invaded the plasmatic medium. Around the tissue, there were radiating spindle cells and many red blood corpuscles. Leukocytes with active ameboid motion and large cells with granular cytoplasm and long pseudopodia had reached the remotest part of the medium. A few large spindle cells were seen crawling along the edges of the fragments of bone.

Epidermis.—We studied the growth of epidermis by cultivating fragments of the skin of an adult frog. Masses of epithelial cells appeared on the edges of the cutaneous fragments after twelve or twenty-four hours. They grew very rapidly. After forty-eight hours, the area of new epidermis obtained in some cultures was twice larger than the old fragment of skin. A few cultures were fixed and stained, and it could be seen that many cells were dividing by karyokinesis.

CULTIVATION OF ORGANS

Thyroid, Spleen, Etc.—Many cultures of glandular organs were made and grew rapidly. The cultivation of the thyroid of adult dogs was very easy. After thirty-six or forty-eight hours, long fusiform cells protruded at one or several points from the edges of the tissue. Often new polygonal cells also could be seen on the upper surface or on the edges of the thyroid. After the fifth and the sixth days, the cultures were generally in full and sometimes wild vegetation, which lasted as long as the plasmatic medium was in good condition. A great many long fusiform cells or chains of fusiform cells radiated from the tissue through the plasma. Polygonal cells were generally closer to the tissue. In a few cultures there was an abundant proliferation of cells resembling epithelial cells, while the fusiform cells were in small number.

The cultivation of suprarenal and of spleen gave also excellent results.

Kidney.—But very much more important were the results of the cultivation of the kidney. Two plasmatic media were inoculated with small fragments of a kidney of a young cat. Twelve hours later, fusiform cells were protruding from the tissue. After twenty-four hours, a great many cells had invaded the plasma all about the renal substance. One day later, the cultures vegetated wildly. On the fifth day, one of the cultures was fixed and stained with hematoxylin. We saw many karyokinetic figures in the cells which had proliferated through the plasma. A tube had begun to grow from the tissue into the medium. The cells showed a condition of great activity.

The other culture was allowed to live to the sixth day and an exceedingly active growth of the cells took place. In the morning, we observed a few tubes growing from the renal substance into the plasma. In the evening, they were very much longer and curved at their blind ends. At the beginning of the seventh day, the culture was fixed and stained. Around the renal tissue a very large number of fusiform and polygonal cells had formed. A few tubes, composed of a lumen limited by epithelial-like cells, had passed from the fragment of kidney for a distance into the plasmatic medium. They had the appearance of renal tubules.

These experiments demonstrate that adult tissues grow very easily outside of the body. Tissues like cartilage, and even like renal substance, can be caused to develop in something like normal manner under entirely new conditions.

REACTIVATION AND CULTIVATION IN SERIES

The second part of our study consisted of modifying the rate of growth of tissues by passing them into a second medium. A few six and seven day old cultures of thyroid were used for the first series of experiments. The thyroid fragments were removed from the old cultures, cut into small pieces and placed into new plasma. Eleven and twelve hours after, new cells protruded from the previously inactive parts of the thyroid substance, as well as from the newly proliferated cells. We found, indeed, that the thyroid of an adult animal had now become as active as the thyroid of an animal a few days old. Afterward the cells invaded very quickly the new plasmatic medium. One of the cultures was fixed a little less than thirty-six hours after the passage into the new plasma and stained with hematoxylin. From one side of the old tissue there was a large mass of fusiform cells radiating through the plasma. From another point, several tubular formations had wandered far into the medium. The wall of these tubules was composed of epithelial-like cells. It seems, therefore, that the passage from one medium into another of the same kind increases the vegetative power of the thyroid cells.

In a second series of experiments, a plasmatic medium was inoculated with cells produced by the cultivation of a thyroid fragment, in order to obtain a second generation of cells. In several instances, this result was achieved. After twenty-four hours, we noted that a few cells had wandered from the old plasma into the new. In one experiment, less than four hours after the inoculation, the new plasmatic medium already contained new cells. One of these cells was fusiform and its activity was so great that we could follow under the microscope the motion of its cytoplasmic gravitations and the changes of its shape. In a few minutes, one end of the cell became very large, while a long tail grew at the opposite end. Finally the cell became multipolar. Other cells appeared at the same time in the new medium. Thirty-six hours later, the culture was fixed and stained and many active cells resembling epithelial and connective tissue cells were found to be present in the new plasma. We had, therefore, obtained a second generation of the first culture of thyroid cells.

CONCLUSION

The main results of these observations can be summarized in a few words: Adult tissues and organs of mammals can be cultivated outside of the animal body.

The cultivation of normal cells would appear to be no more difficult than the cultivation of many microbes. It remains, however, to be determined whether continuous series of cultures can be secured. This method can, therefore, be used for the study of many important problems. For instance, it may render possible the cultivation of certain micro-organisms in conjunction with living tissue cells or alone in plasmatic media. Then it will be of great value in the study of the problem of cancer. We have already succeeded in inoculating a plasmatic medium with sarcoma of the fowl; cells appeared in the surrounding plasma after nine hours and the culture is growing actively at present. We can assume, therefore, that the perfection of the method of cultivating adult tissues of mammals outside of the body will be helpful in the exploration of unknown fields of human pathology.

Work is in progress along the lines indicated, the results of which will be published from time to time.

Therapeutics

DIET IN TYPHOID FEVER

As typhoid fever has its most active pathology in the intestinal canal, and as all ordinary food must traverse this canal, and as in this almost invariably protracted fever nutrition is a matter of serious consideration, the character of the food given in this fever is always a live subject for discussion.

While this subject has been several times touched on in this department, the last word has not yet been said, as evidenced by the repeated discussion of the subject, both in medical journals and in medical societies.

Whether we have under-fed our typhoid patients or over-fed them, it seems that the evidence is very strong that milk alone is not the proper food for these patients. In fact, when we consider the frequent difficulty in its digestion, the large amount of it that must be given to satisfy the system either in calories or in protein, it would seem that we should rule against it as a typhoid diet. These facts immediately cause the decision that our old feeding of typhoid fever was wrong, and that we must select a new or modified food in this disease.

It can not be questioned that the high temperature, rapid pulse, delirium, and that association of nervous symptoms called typhoid are not caused by the typhoid germ alone, but by a double infection, and the double or secondary infection is due to toxins or the products of secondary germs absorbed from the intestines.

Tympanites is an indication not of typhoid fever, but of intestinal putrefaction and fermentation, and a mistake in the management of the bowels and of the food administered. Tympanites need not be a symptom of typhoid fever, and when it is present it is almost invariably a medical mistake. It is too easily a demonstrable fact to require anything more than the assertion that, if the abdomen is flat and not distended, if the bowels have properly moved, and if there is no troublesome diarrhea or obstinate constipation, then the tongue is less coated and is not dry, the temperature is less, the skin is moist, the pulse is better, the delirium is less or generally absent, and such symptoms as carphology and subsultus are absent. The temperature being lower than with such added bowel infection, there is less necessity for disturbing the patient with cold water antipyretic measures, and the less such disturbance the quieter the nervous system and the less loss of nutrition, to say nothing of the less irritation of the heart from rapidity caused by the exercise and nervous excitement due to cold applications.

It stands to reason, then, that primarily such food and arrangement of the movements of the bowels as cause the least tympanites and the least indigestion are of first importance in the management of typhoid fever. Secondly, the food which, so far as possible, satisfies the requirements of the body for nutrition and at the same time satisfies the above requirements of easy and thorough digestion, should be the food of choice.

It must always be considered, of course, that during the fever term there will be a progressive loss of weight, in other words, a denutrition. It is probably impossible to prevent this by any amount or any character of the food, as before sufficient nutriment could be absorbed to prevent loss of weight such indigestion would be caused as to preclude its administration. As it is impossible to determine exactly how much of all of the different elements of food the patient can absorb just inside of his limit of perfect digestion, we must have

a scheme or plan of nutriment that theoretically should be satisfactory to all these typhoid patients, and then individualize this plan to each patient. If we always keep inside of gastric indigestion and prevent tympanites, we are immediately reducing the ordinary fatality of typhoid fever by at least half. In other words, the nervous wear and tear is not so great and the danger of intestinal hemorrhage and perforation are reduced to a minimum.

Before considering the diet in detail, the intestinal condition should be considered, both theoretically and practically. Inflammation of any part of the intestines can not occur without causing increased secretion, increased peristalsis, and more or less diarrhea the character of which will depend on the part of the intestine in which the inflammation is located. There will always be an increased amount of mucus secreted, possibly blood-streaked; and there may actually be a sufficient number of white cells, either alive or dead, in the bowel movements to be termed pus. If there is irritation enough at any one point, irregular peristalsis may occur and pain be present. If there is irritation enough to cause a spastic condition of some part of the bowel, intestinal gas will accumulate above this part, and more pain and distention occurs. If either normally digested refuse products or products of excretion or undigested food reaches the inflamed part, it is more or less retained there by the abnormally adhesive exudate on the mucous membrane, or retained by abnormal and irregular peristalsis, and fermentation, if not actual putrefaction, occurs, with increased intestinal pressure aiding and abetting in the absorption of the toxins produced.

From all these facts, then, and they are facts, Nature's method of removing the undigested food and the products of inflammation by diarrhea should receive our encouragement and not our opposition. It is true that Nature is working just as faithfully for the pathogenic germs as she is for the patient who harbors them; consequently, we can not absolutely trust Nature to cure the patient, but we could not interfere with the natural measures taken by the patient's metabolism itself to get rid of his infection. Neither should we leave it all to Nature's doubtful processes. In other words, the diarrhea should be managed, but constipation neither allowed nor caused in typhoid fever.

The patient, then, should receive at first a cathartic, either calomel or castor oil, and then after the intestinal canal is clean, he should every other day have a dose of the laxative found best in his particular case. Whether the laxative to cause one or two good movements every other day be a vegetable (generally best) or a gentle saline (sometimes best), is a matter of unimportance. If the laxative tends to cause a diarrhea or several movements, a 1/10 grain morphin tablet should be administered after the second movement. This will inhibit peristalsis and cause no other symptoms. The laxative being given every other day, on the intermediate or alternate day a simple rectal injection of 15 c.c. (half an ounce) of glycerin and an equal amount of water should be given. This will cause an evacuation of the lower bowel and expulsion of gas.

Such a management of the bowels will keep the lower part of the small intestine as clean as possible, will prevent the fretty tire and discomfort of a diarrhea, will give rest enough for the intestinal ulcers to heal, and will prevent the stagnation of putrid products, which cause, besides the general symptoms above described, deeper ulceration into the inflamed glands.

A discussion of bowel antiseptics in typhoid fever will be found in THE JOURNAL, Oct. 12, 1907, page 1293. Hexamethylenamin, having been proved so harmless and yet so useful a drug, should, perhaps, in small amount, be given constantly during typhoid fever, on the theory that, even if it does not cause any antiseptic action in the bowels, it will prevent the typhoid and colon bacilli from infecting the gall-bladder and the typhoid bacillus from becoming lodged in the kidneys, to say nothing of its ability to inhibit the growth of germs on various serous membranes of the body.

The pendulum has swung from insufficient nutriment through an excessive amount of milk feeding in typhoid to the other limit of a large amount of protein and actual solid food, and now is again swinging, very slowly, however, back to a diet arranged according to food values and to the actual needs of the body. To study the diet from this standpoint it is well to review an article on this subject by Dr. Harris A. Houghton, of Bayside, L. I. (*Am. Jour. Med. Sc.*, January, 1910). Shaffer (THE JOURNAL, Sept. 19, 1908, p. 974) two years ago showed that typhoid patients did not receive within 50 per cent. of the kind of food they required, viz., heat-producing and tissue-saving food or calories, while they did receive more nitrogenous food than they required.

Houghton reviews various physiologic experiments which show that during the fever process the glandular secretions of the digestive tract are more or less insufficient. Even the salivary secretion is less than normal, and may even become acid. This is one of the causes of the dry mouth, coated tongue and sordes, and is an indication for the slight salivary stimulation afforded by lemonade and orange juice. The hydrochloric acid of the stomach is greatly diminished, and it is still further decreased in amount if sodium chlorid is not given with the food. The absence of sodium chlorid from the diet was another long-continued mistake during the milk-feeding period of typhoid fever. The bile is also decreased, and, although there is no experimental evidence to show a diminution of the pancreatic secretion or the secretion of the intestinal mucous membrane, it is safe to infer that these are also diminished. In other words, it has been estimated that the ability to digest food is decreased from 10 to 12 per cent. in the typhoid patient. Hence, as the absorptive toxins are more serious in protein maldigestion than in starch maldigestion, the deduction seems rational that too much protein should certainly not be administered.

Houghton recalls to mind that Chittenden and others have proved that an increased amount of nitrogen with protein indigestion does not ordinarily add nutrition or strength to the system, but is represented by an increased output of nitrogen products in the urine, the body taking up and utilizing but a small part of the nitrogen ingested. This is certainly just as true of a typhoid patient, and, while part of his nitrogen metabolism will be passed in the feces, a large part must pass in the urine, and will enter, on account of his maldigestion, into irritating and even more or less toxic nitrogen compounds before being excreted by the urine. It would therefore seem a sensible deduction to give the typhoid patient just sufficient nitrogen for his needs as it could be approximately estimated and not an excessive amount to his harm. From this same reasoning, as soon as convalescence is established and the patient begins to put on nutrition, he must of necessity need more nitrogen, i. e., more protein. If a mistaken, ill-judged amount of protein food, carrying with it a large amount of nitrogen,

is forced on a patient who is severely ill, and at the same time an insufficient amount of carbohydrate food is given, a careful quantitative and qualitative analysis of the twenty-four hours' urine excreted will show that abnormal urinary products are the result, especially the ammonia compounds, indican and other irritants, and doubtless not only the symptoms present, but actual death may be caused by these toxins, not dissimilar to a uremic death. In other words, such feeding is vicious.

As has been above urged, Houghton reminds us that a large amount of bacterial decomposition is caused by overfeeding of protein, and the obverse is true, viz., that if the protein is limited the bowel fermentation is diminished and the danger from typhoid is reduced. Another effect of the absorption of undesired nitrogen compounds is irritation of the blood-vessels sufficient to cause vasomotor constriction. This constriction of the surface vessels during fever is undesirable, as it prevents radiation and perspiration, and the skin becomes dry and hot and the temperature is increased. If the patient receives an extra amount of protein and an insufficient amount of carbohydrate, starch, etc., during the fever, the increased amount of ammonia compounds excreted by the urine, as just stated, due to maldigestion, may develop an acidosis of the system or a diminished alkalinity of the blood, and again we have an unnecessary death.

It has been shown that during fever the glycogen of the liver is diminished, and if starch foods are not administered it may entirely disappear from the liver, all the glycogen appearing in the muscles. This is suggested by Houghton as probably to represent a need of the cells for combustible material; again, another indication for food that will readily form glycogen. It is also, and has been, a well-known fact that the part of the body that burns first in protracted fever is the fat, and the more fat the patient has, other conditions being equal, the longer will probably his muscular tissue or solid tissue be protected. Also, in the absence of carbohydrate food his body fat will burn to such acid products as diacetic and beta-oxybutyric acids and to acetones, with the result of causing acidosis and death if the food is not corrected. Hence it is wise to conserve this fatty tissue by protecting it, and to prevent acidosis, by the administration of such foods (fats and starches) as will furnish material for the fever process, even though it is probably impossible for the patient, under the conditions, to deposit new fat. In other words, he needs more calories than he has been receiving.

Houghton suggests as a possible cause of a final condition of shock or vasomotor dilatation which so often occurs as a final in typhoid fever, failure of the adrenal glands. The shock condition in ptomain poisoning from absorption of depressent toxins, and the similar condition of surgical shock after abdominal operation in which the sympathetic abdominal plexuses are often of necessity injured, seem to show that absorption, especially of toxins produced by nitrogen decomposition, probably can inhibit the activity of the adrenal glands and cause just the condition of shock which we often see. This is one more reason for preventing this kind of toxemia, viz., that from an excessive amount of protein ingestion in typhoid fever.

While it is well known that glycogen and sugar (in other words, products that burn) can be metabolized from pure protein, as evidenced in true diabetes mellitus, it is certainly a disadvantage to the system to be compelled (and especially during a fever) to make its glycogen and sugar out of protein stuff. Therefore it seems self-evident that starch should be a large part of the typhoid patient's diet, with the addition of sugar.

The ideal estimated diet of a typhoid patient should therefore be a small amount of protein, enough to represent, if possible, his daily nitrogen loss which will persist throughout the fever but has not been proved to be a cause of final dissolution; as much carbohydrate as he can comfortably digest without the production of flatulence, given in the form best suited to the individual patient; a little sugar, cane sugar, or, perhaps better, milk sugar, for his glycogen need; sodium chlorid sufficient for his hydrochloric acid need; possibly a few drops (not more than five) of dilute hydrochloric acid three or four times in twenty-four hours after a feeding that carries with it protein. The patient should also receive some fat, perhaps best in the form of a little buttered toast or a little cream, whichever it is found he best digests. The amount of water he receives should be sufficient, and it should be enough to cause him to pass at least a quart of urine in twenty-four hours, and better a larger amount.

Houghton suggests a diet and presents it in table form with the amounts of protein, fat, carbohydrate and calories appended. For an adult of ordinary size and weight the following represents his suggestions: His feeding intervals are two hours apart, from 6 a. m. to 8 p. m. (Three-hour intervals are better, perhaps, with longer intervals during the night.) At 6 a. m. he suggests a cup of coffee with 2 heaping teaspoonfuls of sugar and a desertspoonful of cream, and a choice of 2 thin slices of toast, a breakfast biscuit or zwiebach. At 8 a. m. he would give 2 heaping tablespoonfuls of cream of wheat gruel, with a handful of oyster crackers. At 10 a. m. he gives 8 ounces of vegetable soup. At 12 noon he allows a small baked potato mashed and made tasty with a tablespoonful of cream and a piece of butter the size of a domino, 2 thin slices of toast, hot weak tea with 2 heaping teaspoonfuls of sugar. At 2 p. m. he gives 2 tablespoonfuls of tapioca pudding and a handful of oyster crackers. At 4 p. m. he gives rice seasoned with 2 heaping teaspoonfuls of sugar and another domino of butter. At 6 p. m. he gives 2 thin slices of toast, more butter and a heaping teaspoonful of sugar; at 8 p. m., 8 ounces of vegetable soup, with more oyster crackers.

The vegetable soup above mentioned is prepared as follows: "Two ounces each of green or canned French peas, white dry beans, potato, rice, and noodles, and a half ounce of carrot are boiled in water at least four hours. Enough water should be added to make a quart, which would be sufficient for four feedings. The whole yields 760 calories, of which 6.3 per cent. is protein, fat less than 0.2 per cent., and 43.9 per cent. is carbohydrate. When ready to use stir up sediment and allow the patient to eat all (including noodles) with the exception of the pea and bean skins."

Houghton urges that the patient should be fed with a spoon, and that the food should remain in the mouth as long as convenient. He would give water between the feedings, and not with the meals. He recommends the increase of nutriment (probably meaning protein) as soon as convalescence is established. At the height of the fever, if these foods are distasteful or if the patient cannot eat the full quantity, he would substitute milk sugar in considerable amount.

As this diet recommended by Houghton does not contain iron, a patient on such diet should receive a sugar of iron (*Eisenzucker*) tablet, each 3 grains, 2 or 3 times in 24 hours, or 3 or 4 drops of the tincture of the chlorid of iron, in fresh lemonade, 3 or 4 times in 24 hours.

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[*For other information see second page following reading matter*]

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FOREIGN BODIES IN THE HEART

The traditional conception of the heart as the seat of the vital spark and the home of the soul still flavors our thoughts enough to cause interest in those occasional cases in which even considerable injuries to this organ have failed to lead to sudden or even remote catastrophe. And this feeling persists in spite of the growing experience of the surgeons that operative attacks on the heart are entirely feasible, and the common procedure in laboratory work of drawing a few cubic centimeters of blood from the heart of guinea-pigs whenever desired, the last operation being equivalent to tapping a human heart with a large caliber trocar and withdrawing one or two pints of blood. As regards the effect of wounds on the heart, the determining feature is less how much injury than where and how it takes place. Large secondary tumor growths may be found unexpectedly within the heart at necropsy, having produced no effect to indicate their presence, while small gummas in the vicinity of the bundle of His give rise to profound disturbances in function. So, too, with wounds of the heart, oblique penetrating wounds in the thick walls of the ventricles may not leak because closed by the systolic contraction, while wounds in the auricles usually cause fatal hemorrhage, and wounds in the pathways of conductivity are frequently instantaneously fatal.

Perhaps the most spectacular of pathologic conditions in the heart are those in which foreign bodies persist in the heart for long periods without causing manifest harm. This condition has been observed most frequently in cattle, which sometimes take nails, needles and similar pointed objects in their food; these articles may migrate from the stomach or esophagus into the pericardium, and sometimes into the heart itself. Galen knew of a deer which lived for a long time with the point of an arrow in its heart, and Weber, in 1600, describes the finding of an encapsulated bullet in the wall of the heart of a deer. In man such a condition has not been observed so often, but Zesas[1] recently collected and classified reports of 118 cases, which number, of course, represents far less than the actually known cases. The number is rapidly increasing of late, especially through the use of the *x*-ray, which now sometimes discloses as located harmlessly in the heart a bullet whose whereabouts would otherwise never have been suspected. Increased frequency of necropsies also adds to the number of cases, for occasionally a foreign body is thus found in the heart as a necropsy surprise, as in the case described by Koch, who found a large nail in the entirely healed heart of a man who died from an absolutely unrelated condition. Of the 118 foreign bodies found, described by Zesas, 54 were needles and 38 were bullets, all the other objects being of diverse nature, with but two or three of each sort having been found. From the predominance of needles as foreign bodies in human hearts, and of nails, needles and pins in bovine hearts, it is evident that such pointed articles do tend to migrate from the point of entrance, however conflicting the experimental evidence on this point may be. Bullets, however, sometimes reach the heart most indirectly by way of the blood-stream, there being several instances in which the missiles have entered large vessels, especially the pulmonary veins, and from here have passed by gravity or by the force of the current into the heart. There are also a few striking cases in which bullets entering the heart have after a time escaped into the arterial system and caused embolism of most unusual character.

It would seem that an aseptic foreign body within the heart wall usually causes little disturbance, but if it is within the cavities there may be considerable arhythmia and cardiac irritability until fibrinous deposits have immobilized and encapsulated it. In one case a bullet in the heart wall caused no trouble for three weeks, then it penetrated into the ventricle, where it could be seen by radioscopy tossing about violently and causing most violent arhythmia, until it became stationary after six months. Evidently, then, operative interference will seldom be indicated when it is found by radioscopy that a bullet or other foreign body has lodged in the heart, unless infection is feared or pericardial hematoma is present. The possibilities of cardiac surgery in such cases are shown by the case of the patient operated on by v. Manteuffel, in which, after the wound of entrance on the anterior surface of the right ventricle had been sutured, the bullet was removed from the cavity of the same ventricle through an incision in the posterior wall, recovery being uneventful.

1. Zesas, D. G.: Fortschr. d. Med., 1910, xxviii, 649. Briefly abstracted in THE JOURNAL, July 23, 1910, p. 358.

ERRORS IN DIAGNOSIS AS REVEALED AT AUTOPSY

The interesting and instructive oration of Cabot which appears in this issue, deserves some comment because of its possible misinterpretation by medical students and by younger practitioners. A general discussion of 1,000 cases in a brief time requires the omission of much detail which would greatly alter the general effect of the paper, though not the absolute figures.

In every large general hospital a considerable proportion of the cases which ultimately reach the autopsy table are under observation for too brief a time to permit of any thorough study; and, what is more important, the patients reach the hospital already moribund and in such condition that any except the most superficial examination is impossible. Under such circumstances, many errors of diagnosis are made and, as a matter of fact, are quite immaterial. The duty of the physician at such a time is often that of easing the last hours rather than that of making a diagnosis.

Much more important, however, is the fact that while Cabot divides the errors into those of omission and those of commission, he fails to point out that there are very great differences between these two groups of errors. The percentage of errors of omission is determined only by the care of the pathologist. Few bodies are examined after death without showing conditions which were not suspected during life, and it is hardly probable that the science and art of diagnosis will ever reach so high a plane that errors will not be common. Most of the mistakes of this nature are immaterial, so far as the patient is concerned, for they would not usually in any way affect the treatment which the patient received during life.

A summarization of Cabot's table shows 1,535 cases: *i. e.*, many of the 1,000 individual autopsies are included more than once, and there are 602 errors of omission. In the absence of details, it may be admitted that some of these errors are material, but in many cases they are merely defects in anatomic diagnosis. It is, for example, unimportant that in a case of valvular disease of the heart some one or more of the defects are unrecognized clinically. The fact that in a given case the patient has a double mitral lesion instead of the single mitral lesion recognized during life, would in no way affect the treatment. We would not be understood as discrediting every effort at anatomic accuracy in diagnosis, but let us keep distinct in our minds that which is material and that which is not. For example, such a condition as acute pericarditis was overlooked in no less than 38 of 54 cases. It is probable that the great majority of instances of pericarditis occurred in the course of acute pneumonia or acute sepsis with endocarditis, both being such severe diseases, accompanied by such prominent thoracic changes, that an intercurrent acute pericarditis would be easily overlooked even though sought for. In truth such an omission is, from the patient's standpoint, of no consequence at all.

No less than 64 per cent. of the cases of bronchopneumonia were undiscovered clinically; but again lack of detail does not enable one to infer in how many of these cases the area involved was too small to permit of clinical recognition, or in how many of them the bronchopneumonia was a terminal incident in the course of some such affection as apoplexy, uremic coma, typhoid fever or carcinoma.

In contrast with the 602 errors of omission are 126 of commission. In a general way, errors of this sort are of greater importance and are more difficult of explanation although many of these also are easily understood.

The paper is one of great interest, but it may give an erroneous impression which could be avoided only by the inclusion of detail which of course the author did not attempt to give.

A SUPREME COURT OF SCIENCE AND ITS RELATION TO VACCINATION

In view of the fact that many of the issues which divide the country into opposing camps have a basis in some problem coming properly within the scope of scientific investigation, Prof. J. Pease Norton[1] of Yale University suggests that it would be well if we had under government auspices a court of technical experts to decide such issues. He proposes that the cases in question should be argued by legal counsel before a jury of scientists, who should be capable of differentiating between traditional scientific knowledge and scientific knowledge based on evidence.

It so happens that the particular case which Professor Norton uses as his illustration, and the one with which he seems most deeply concerned, is that of vaccination versus antivaccination. Surely nothing could be more satisfactory to the medical profession than to have the evidence of both the efficacy and the imperative necessity of universal vaccination marshaled *en masse* against the trivial claims of those who, unable to weigh the value of evidence, have earnestly, and in most instances with honest good-will, sought to deprive human society of its only effective guard against one of its most hideous adversaries.

Professor Norton himself seems to consider the matter as essentially a financial one, for he says: "Before such a court of science all interested parties could appear with experts; on the one side the virus manufacturers, the physicians, and those public health officials who believe in the practice, and on the other side the taxpayers and the people represented by the government"; and again, "the virus makers and the physicians are not the only interests which are interested in vaccinating the people for something."

Disregarding these insinuations, which seem to bear a *New York Heraldic* device, we would call the attention of the New Haven professor to the fact that this particular problem has long since, and repeatedly, been tried in the court of science, and before just such a jury as he must approve, consisting, as it does, of those scientists who are best fitted for the weighing of the evidence in a case involving disease and human health. Surely he must know that the juries of experts on infectious diseases and immunity, epidemiology and public

1. Popular Science Monthly, October, 1910.

health, have always, and practically without a dissenting voice, decided the case in favor of universal, repeated and, where lack of understanding requires it, compulsory vaccination.

Current Comment

COLLEGE ENTRANCE EXAMINATION BOARD'S 1910 REPORT

The tenth annual report of the secretary of the College Entrance Examination Board,[1] recently issued, contains considerable data of interest to those who are trying to solve the problem of entrance examinations to medical colleges. This board was established a decade ago by a number of the leading colleges and universities to conduct entrance examinations, and its policies are controlled by those institutions, now twenty-nine in number. The magnitude of the board's work is shown by the fact that this year 45 college-trained examiners were appointed to frame the questions used at the examination held June 20-25, 1910, and 140 readers were required to grade the papers of the 3,731 students examined. These students represented 785 different secondary schools and sought admission to 70 different colleges and universities, 26 of which have medical departments. The extent of this board's work geographically is shown by the fact that examinations were held this year in 165 different cities and in 40 states, beside Hawaii, Canada, and 4 European countries. In the last five years the board has examined 15,927 students representing 1,688 different high schools, academies and colleges. By the passing of this board's examinations admission may be secured to almost any standard university in the country. The question may fairly be asked: Would it not be advisable for medical colleges to refer to this board for examination all students who do not hold diplomas from accredited high schools? Such action would do away with much of the confusion of tests which at present are employed and would at the same time furnish a sufficient guarantee that the student actually has the equivalent of a four-year high-school education.

TESTIMONIALS

There never was a "patent medicine" firm that did not claim that it had "thousands of unsolicited testimonials," and that "lack of space" was its only reason for not publishing more endorsements of its product. As a matter of fact the testimonial does not come as easily as these claims indicate. To get most of them requires some effort and at least a small expense The gift of a dozen pictures to the individual who will testify to belief in the curative power of the nostrum is not much, to be sure, yet it is sufficient to make the adjective "unsolicited" an untruth. The fact is, the majority of "patent medicine" testimonials are far from being "unsolicited," as there are men who make a business—and a well-paying one—of getting such endorsements. They do so big a business that it becomes necessary for them to hire men to gather the material; the employer furnishes the information—or "leads," as it is technically called—regarding the persons to be approached and the preparation for which the testimonial is needed. During the past week the following "classified" advertisement has appeared several times in at least one Chicago newspaper under "Male Help Wanted":

> MEDICAL TESTIMONIAL GATHERERS—EXperienced; leads furnished; give references. Address O 355, Tribune.

It would be interesting to learn the name of the concern which requires the services of the "medical testimonial gatherers," and it would be still more to the point to know what nostrums were to get the benefit of the "unsolicited" endorsements thus obtained.

ARSENIC IN PERNICIOUS ANEMIA

The action of arsenic in pernicious anemia is often so favorable as to suggest that it is a specific remedy for this disease. The results for a time are remarkable, and if the observation were terminated when the patient was at his best a cure would undoubtedly be frequently reported. If the remedy in use were some new synthetic a cure would certainly be advertised with great *éclat* without waiting for the final result. Without doubt, there are many cases of pernicious anemia in which arsenic has produced such an apparent cure, which physicians have not put on record because the praise of an official remedy does not afford a sufficient stimulus and because knowledge of the clinical history of the disease leads them to expect a relapse, which usually, but perhaps not always, happens. A case which is reported in this issue[1] is of interest because of this marked improvement referred to and because the author recognized the temporary character of the improvement.

THE FLUELESS GAS HEATER

As a means of warming a room there are few things more pernicious, from a hygienic standpoint, than those oil or gas heating apparatus which are used without a flue pipe to carry off the products of combustion. They not only vitiate the air directly by consuming the oxygen and replacing it with noxious gases, but indirectly they put a premium on insufficient ventilation by making it practically imperative that the windows and doors be shut in order to accomplish the object attained—that of raising the temperature of the room in which they are used. In view of the obvious objections to this form of household heating apparatus, therefore, an advertisement by a gas company which has recently appeared in most of the Chicago papers is much to be deplored. This advertisement sets forth the virtues of a "gas heater" which we are told "needs no flue pipe...it consumes less oxygen than one person and really *purifies the air* by burning dust and germs." Whether the promulgation of such dangerous untruths as these is due to ignorance on the part of the public service corporation which disseminates them or to the unfettered imagination of its writer of advertising copy, makes little difference. It should be stopped.

1. Substation 84, New York City.

1. THE JOURNAL A. M. A., Oct. 15, 1910, p. 1372.

REVISION OF THE PHARMACOPEIA

Last week[1] we commended the action of the National Confederation of State Medical Examining and Licensing Boards, in suggesting a list of commonly used drugs as subjects of examination in materia medica and therapeutics. We suggest that this action should receive the attention of the Committee on Revision of the Pharmacopeia, which will have the responsible task of deciding the scope of the forthcoming Pharmacopeia. Although no one would contend that the United States Pharmacopeia should be restricted to the list referred to, there can be no question that considerable restriction and weeding-out are desirable. The adoption or rejection of the broad principle of wise restriction will determine whether the United States Pharmacopeia is to be a book of scientific materia medica or merely a book of pharmaceutical formulas and standards; or, in other words, whether the United States Pharmacopeia will be revised in the interest of medicine or in the interest of medicines.

THE INFLUENCE OF CALCIUM ON AMEBOID MOVEMENT AND ON PHAGOCYTOSIS

Recent investigations of the influence that various factors may have on phagocytosis have revealed that certain substances under suitable conditions may stimulate phagocytosis. Thus Hamburger and Hekma[2] found that small amounts of calcium are able to promote phagocytosis considerably by action on the leukocytes, and Eggers[3] has shown that magnesium has a similar effect. These results were obtained from experiments with phagocytic mixtures outside the body; more recently Hamburger[4] reports that minute quantities of calcium increase the activity of leukocytes in the living body as well. He placed under the skin capillary tubes containing bacterial cultures with and without calcium and then compared the lengths of the columns of leukocytes which entered the tubes; he also injected physiologic salt solutions with and without calcium into the intestinal canal and measured the columns of leukocytes attracted into capillary tubes containing bacteria and inserted under the skin of animals so treated. In both of these sets of experiments the results clearly indicated that the calcium increased the leukocytic immigration into the tubes; special experiments showed further that the calcium also stimulated phagocytic action. These effects were obtained not only with physiologic salt solution containing calcium chlorid, but also with a mineral water which contains a large amount of calcium; if a quantity of this water containing 0.06 gram of calcium was injected daily into the intestines of rabbits the number of leukocytes entering the tubes increased about 40 per cent. above that observed in untreated animals. It is possible that this biochemical property of calcium may prove of great interest from the therapeutic point of view.

1. THE JOURNAL A. M. A., Oct. 8, 1910, p. 1292.
2. Biochem. Ztschr., 1908, ix, 275.
3. Jour. Infec. Dis., 1909, vi, 662.
4. Proc. Roy. Acad. of Sc., in Amsterdam, June 23, 1910.

Medical News

ILLINOIS

Quarantine Hospital for Moline.—Plans have been formulated by Dr. August H. Arp, health commissioner of Moline for a new isolation hospital to be built immediately in the rear of the Moline City Hospital. The building will be of brick and two stories in height.

The Glidden Hospital.—The DeKalb City Medical Society has selected property just south of the city limits for the Glidden Hospital, for which James F. Glidden left a bequest of $25,000.——The late Col. Isaac L. Elwood, DeKalb, in his will, made provision for the payment of $25,000 to the institution.

Cases Dismissed.—The trial of Dr. William Hecker, Watseka, at Portage, Wis., charged with being responsible for the drowning of his wife at Fox Lake in August, was concluded, October 7, by the dismissal of the case.——In the case of Dr. Thomas D. Doan, Scottville, charged with an attempt to produce abortion, the jury returned a verdict of not guilty.

Personal.—Dr. Sidney G. Pratt, Buda, who has been ill for a year, has recovered and resumed practice.——Dr. Annie B. M. Alguire, Belvidere, who was operated on at the Presbyterian Hospital, Chicago, September 3, is reported to be doing well.——Dr. Karl F. Snyder, Freeport, suffered a compound fracture of the right arm while cranking his automobile, October 1.——Dr. and Mrs. Daniel B. Bobb, Dakota, celebrated their golden wedding anniversary, October 7.——Dr. Ralph E. Niedringhaus, Granite City, a member of the State Board of Health, was seriously injured in Granite City, September 28, in a collision between his buggy and an ambulance. ——Dr. and Mrs. Harry H. Whitten, Peoria, left for Europe October 14.——Dr. Robert S. Denney has been appointed local surgeon of the Burlington System at Aurora, vice Dr. Augustus R. Reder.——Dr. Charles F. Smith, Kankakee, was appointed president of the Big Four Railway Surgeons' Association, at its meeting held in Indianapolis, October 4.

Chicago

Personal.—Dr. and Mrs. Samuel J. Walker and family, and Dr. and Mrs. Corey H. McKenna have returned from Europe.

Unlicensed Practitioners Fined.—J. Kerasibowska, A. Nowagruska, Mrs. E. Bonanami, and George Drews, charged with practicing medicine without license, are reported to have been fined $100 each.

Charity Ball.—A charity ball is to be given at the Blackstone Hotel, October 31, under the auspices of the board of managers of the Mary Thompson Hospital, for the benefit of that institution.

Old Hospital Building Demolished.—Wreckers have commenced demolition of the old building of the Presbyterian Hospital, erected in 1883, which will be replaced by a seven-story structure, provided for in the will of the late Thomas Murdoch.

Clinical Fortnight.—A clinical symposium is announced to be held in Chicago from November 7 to 19, consisting of clinics at various hospitals from 8 a. m. to 5 p. m. on each day. Headquarters for this series of clinics are to be maintained at Hotel LaSalle, where visiting surgeons may register and receive their cards of admission to clinics. Full particulars, programs, etc., may be obtained from Dr. Franklin H. Martin, 100 State Street, Chicago. Special society meetings will also be held during the clinical fortnight.

INDIANA

Personal.—Dr. Albert May, Crothersville, was painfully injured by a fall from the window of an interurban car.——Drs. John N. Hurty, Indianapolis, and William F. King, Columbia City, of the State Board of Health, began the "Health Week Campaign" in Warsaw, October 10.

Prevention of Blindness.—At the recent meeting of the Indiana State Medical Association, a committee composed of Drs. George F. Keiper, Lafayette; John N. Hurty, Indianapolis; Thomas B. Eastman, Indianapolis, and Albert E. Bulson, Jr., Fort Wayne, and Prof. Severance Burrage, Lafayette, was appointed to inaugurate a propaganda on the prevention of ophthalmia neonatorum, to work in cooperation with a similar committee of the American Medical Association.

Requests Removal of Member of Board.—The Indiana State Medical Association, at its recent meeting, endorsed the action

of the board of councilors, through Dr. William H. Wishard, Indianapolis, chairman, requesting the removal of Dr. Solomon G. Smelser, Richmond, from the Indiana State Medical Board. Dr. Smelser is charged with incompetency and with not being a representative, in any true sense, of the high professional standing embodied by the State Medical Association.

MARYLAND

Chiari in Baltimore.—Dr. Hans Chiari, during his visit in Baltimore, was the guest of Dr. J. Whitridge Williams. Professor Chiari was accompanied by his daughter.

Contract for State Hospital Awarded.—The contract for the new building for the indigent insane at the Springfield State Hospital, Sykesville, has been awarded at an estimated cost of $30,000.

Poliomyelitis.—The State Board of Health is investigating poliomyelitis, of which eight cases have been reported during the last four months. It is believed that the disease is very prevalent in Maryland. The board is preparing an exhibit showing the causes of infant mortality, including poliomyelitis, to be presented at the meeting of the American Association for the Study and Prevention of Infant Mortality to be held in Baltimore.

Personal.—Dr. John E. Legge, Oakland, sailed for Europe October 8.——Dr. Samuel Johnston, Baltimore, who was recently operated on at the Union Protestant Infirmary for appendicitis, has recovered.——Dr. John W. Chambers, Baltimore, is suffering from an infected hand due to an operation wound.——Dr. Florence Rena Sabin, associate professor of anatomy in Johns Hopkins University, has been given the degree of D.Sc., by Smith College, Northampton, Mass.

MICHIGAN

Detroit Tuberculosis Sanitarium.—The main building of the new tuberculosis sanitarium on Twelfth Street, three blocks from the city limits, is nearly finished and two cottages are practically ready for occupancy.

New Hospital.—Dr. William McBurney's hospital, Stambaugh, is finished and opened to the public. It is a three-stories and basement structure and contains five private rooms on the second floor and a public ward on the floor above.

Work on Tuberculosis Hospital Well Under Way.—Good progress is being made on the Marquette County Tuberculosis Hospital at Morgan. Work on the building will be continued throughout the fall and winter and the institution is expected to be ready for occupancy by May 1 next.

Medical Inspection Starts in Saginaw.—Medical inspection of the East Side public schools of Saginaw has been inaugurated and the following medical inspectors have been appointed: Drs. G. Harry Ferguson, J. Neil McLean, Fred W. Edelman, H. Roy Wilson, David E. Bagshaw and John M. Campbell.

Milk Exhibit.—A milk contest was held in Detroit, September 26 and 27. President Larned of the Board of Commerce introduced the speakers, who were Health Officer Guy L. Kiefer and J. C. Weld, chief of the market milk bureau of the U. S. Department of Agriculture. Prizes were awarded and more than 1,600 persons visited the exhibit.

Personal.—Drs. Willet J. Herrington and Charles B. Morden, Bad Axe, have returned from a trip to Great Britain.——Dr. Neal L. Hoskins, Detroit, has been appointed an ad interim member of the local board of pension examining surgeons, vice Dr. John F. Bennett, deceased.——Dr. Brett Nottingham, Lansing, has been appointed a member of the State Board of Registration in Medicine.

State Medical Society Meeting.—The forty-fifth annual meeting of the Michigan State Medical Society was held in Bay City September 28 and 29, under the presidency of Dr. J. Henry Carstens, Detroit, and the following officers were elected: President, Dr. Colonel B. Burr, Flint; vice-presidents, Drs. Charles T. Southworth, Monroe, Henry Kremers, Holland, Albert B. Simonson, Calumet, and Isaac L. Spaulding, Hudson. Detroit was selected as the place of meeting for 1911.

Appropriation for Antituberculosis Society.—The city council of Hancock has appropriated $200 for maintenance in the city of a clinic for indigent sufferers from tuberculosis, and the Houghton County Antituberculosis Society is making preparations for the opening of a building for the clinic in Hancock.——The recent annual ball at Houghton realized more than $650 for the Houghton County Antituberculosis Society.

New Home for Medical Society.—The new building of the Wayne County Medical Society was occupied for the first time September 12. On this occasion Dr. Angus McLean was inaugurated and a luncheon was given to the society by the retiring president, Dr. Arthur D. Holmes.

NEW MEXICO

Sanatorium Enlarged.—Dr. Abraham G. Shortle, who has been operating a sanatorium east of Albuquerque, will build additions so as almost to double the capacity.

State Tuberculosis Society Meeting.—At the second annual meeting of the New Mexico Tuberculosis Society, held in connection with the meeting of the New Mexico Medical Society at Albuquerque, September 30, the following officers were elected: president, Dr. Francis T. B. Fest, East Las Vegas; vice-president, Dr. John W. Colbert, Albuquerque, and secretary-treasurer, Dr. LeRoy S. Peters, Silver City.

Territorial Society Meeting.—The twenty-ninth annual meeting of the New Mexico Medical Society was held in Albuquerque, September 29 to October 1, and the following officers were elected: president, Dr. Francis T. B. Fest, East Las Vegas; vice-presidents, Drs. Robert L. Bradley, Roswell, and Leroy S. Peters, Silver City, and secretary and editor of the *New Mexico Medical Journal*, Dr. George S. McLandress, Albuquerque, and member of the council, Dr. James H. Wroth, Albuquerque. The next meeting of the association will be held in Las Vegas.

NEW YORK

Medical Library Association Meets.—At the annual meeting of the Utica Medical Library Association, October 3, the following officers were elected: president, Dr. Raymond L. Baker; vice-president, Dr. Thomas C. Gifford; secretary, Dr. Angeline Martine; treasurer, Dr. John W. Rayhill, and librarian, Dr. Smith Baker.

District Medical Society Meeting.—At the annual convention of the Third District Branch of the Medical Society of the State of New York, held in Albany, October 4, Dr. Mark O'Meara, Kingston, was elected president; Dr. John B. Harvie, Troy, vice-president; Dr. Henry L. K. Shaw, Albany, secretary, and Dr. Sherwood V. Whitbeck, Hudson, treasurer. The next meeting will be held in Kingston.

Personal.—Dr. Elbert A. Palmer has resigned as secretary and manager of Dr. Strong's Saratoga Springs Sanitarium, and will open an office in New York City.——Dr. William Kemble, Kingston, had two ribs broken and sustained internal injuries in an automobile accident, October 7.——Dr. Robert G. Cook of Canandaigua has been appointed manager of the Western House of Refuge for Women.

New York City

Medical Colleges Open.—The College of Physicians and Surgeons, Columbia University, and University and Bellevue Medical College opened on September 28. Dr. William G. MacCallum delivered the opening address at the former institution, on "The Future of Medicine."

Ambulance Service for Insane.—For the first time in the history of the institution, ambulance service for handling cases in the psychopathic ward of Bellevue Hospital has been installed. Heretofore insane patients have been brought to Bellevue by patrol wagons or in private conveyances. Two trained nurses will go out with the ambulance on each call.

Personal.—Dr. Max Huhner, Dr. Abraham L. Wolbarst, and Dr. and Mrs. Henry Koplik, have returned from Europe.——Dr. Frank E. Wilson, Brooklyn, has been nominated for Congress.——Dr. Joshua M. VanCott, Brooklyn, has been appointed a member of the State Board of Charities.——Dr. Antonio Stella has been appointed a member of the commission to consider the more normal distribution of population.

Columbia Needs Hospital.—Dr. Samuel W. Lambert, dean of the College of Physicians and Surgeons, in his annual report to President Butler and the University trustees, makes an urgent plea for a hospital in connection with the college. For this purpose he wants $6,000,000 for building and endowment. He also states that the first report of research work done under the Crocker research fund will soon be ready for publication.

Cholera in New York Harbor.—On September 29 a man who had been taken from the SS. *Germania* from Marseilles and Naples three days before, died from cholera at Swinburne Island. On September 25, a man died aboard SS. *Santa Anna* and was buried at sea. This vessel is still held in quarantine and there are two suspected cases. There was another suspect

on board the Hamburg-American steamer *Moltke*. Surgeon General Wyman of the United States Public Health and Marine-Hospital Service has conferred with Dr. Alvah H. Doty and the situation is not regarded as at all serious, but it has been deemed wise to enforce a five-day quarantine on all vessels coming from infected ports, and the force of United States inspectors has been increased abroad and passengers embarking for this port will be detained for five days before embarkation. No case of cholera has been brought to this port by a cabin passenger in forty years.

Harvey Society Lectures.—The sixth course of Harvey Society Lectures under the patronage of the New York Academy of Medicine begins October 15, when Prof. Hans Chiari of the University of Strasburg, Germany, delivers a lecture on "The Significance of Pathologic Autopsies and Other Pathologic-Anatomic Investigations." The succeeding lectures are as follows:

November 5: Prof. W. E. Castle, Harvard University, "Unit Characters in Heredity."
November 19: Prof. Jacques Loeb, Rockefeller Institute for Medical Research, "The Prevention of Toxic Action of Various Agencies Through the Prevention of Oxidation in the Cell."
December 10: Prof. Harvey W. Cushing, Johns Hopkins University, "Certain Clinical Aspects of Dyspituitarism."
January 14: Prof. Arthur R. Cushny, University of London, "Therapeutics of Digitalis."
February 14: Thomas B. Osborne, Connecticut State Agricultural Experiment Station, "The Chemistry of the Proteins."
March 25: Prof. H. Gideon Wells, University of Chicago, "Calcification and Ossification."

Work at the Budget Exhibit.—At the budget exhibit of the Board of Health, which is to be open for a month, the New York milk supply has been thoroughly discussed, and Dr. Lederle has asked for 17 additional inspectors, as inspection now must be carried into six states. Dr. Herman M. Biggs has asked for $103,759 for research laboratory extension. He shows why this request should be granted. The entire cost of the research laboratory to the city was $58,850 last year. If the city was not producing its own antitoxins it would have been necessary to purchase them at a cost of $70,635, or nearly $12,000 more than the laboratory budget for the year. Dr. Walter Bensel called attention to a serious condition at the Willard Parker Hospital, where there were only fifteen physicians last year for 1,500 patients and only 169 nurses, while 38 physicians and 300 nurses were required. He also showed that Riverside Hospital and the Kingstown Avenue Hospital, Brooklyn, were inadequate. Commissioner Drummond of the Charities Department said that the department had under its care 12,000 persons, with a working force of 2,000 in addition. He said that the department was run on a basis of such rigid economy that experts called it phenomenal. He did not see how the cost could be cut down when every day the population of the department increased.

PENNSYLVANIA

Hospital Asks Funds.—The trustees of the State Hospital for the Insane at Norristown, at their annual meeting October 8, decided to recommend to the next legislature an appropriation, aggregating $290,000, aside from maintenance for building and improvements.

Personal.—Dr. John W. Goodsell, New Kensington, surgeon of the last Peary Expedition, is delivering an illustrated lecture on the trip, entitled "With Peary on the Dash to the Pole."——Dr. Jonathan C. Biddle, superintendent of the State Hospital for Injured Persons, Fountain Springs, was seriously injured in an automobile accident, October 1.

State Society Officers Elected.—At the sixtieth annual meeting of the Medical Society of the State of Pennsylvania held in Pittsburg, October 3 to 5, the following officers were elected: president, Dr. John B. Donaldson, Cannonsburg; vice-presidents, Drs. Thomas N. McKee, Kittanning; David S. Funk, Harrisburg; Luther B. Kline, Catawissa, and John S. Mabon, Pittsburg; secretary, Dr. Cyrus L. Stevens, Athens; assistant secretary, Dr. Alexander R. Craig, Philadelphia; treasurer, Dr. George W. Wagoner, Johnstown; and trustees, Drs. Isaac C. Gable, York; George G. Harman, Huntingdon; William L. Estes, South Bethlehem, and Thomas D. Davis, Pittsburg.

Philadelphia

Portrait Presented College of Physicians.—A portrait of Dr. Adam Kuhn, one of the founders and the third president of the college, the gift of Mr. C. Hartman Kuhn, was presented to the College of Physicians at its first meeting, October 5,

Death of Dr. Shoemaker.—As we go to press, the death is announced of Dr. John Veitch Shoemaker, professor of materia medica, pharmacy and therapeutics, and clinical professor of medicine and skin diseases in the Medico-Chirurgical College of Philadelphia, who died October 11, aged 58. Further notice will appear in the next issue of THE JOURNAL.

Cocain Seller Expelled.—At a meeting of the Retail Druggists' Association, held October 7, the name of Emil Greaff, who was recently convicted for the illegal sale of cocain, was stricken from the membership roll. A further resolution adopted by the association was to drop all "dope" preparations from the shelves of drug stores.

Pure Food Violators Fined.—Three firms of candy manufacturers, prosecuted by the State Dairy and Food Commission, for the alleged violation of the pure food laws, on September 26 paid fines of $62.50 each in advance of hearings before Magistrate Beaton. Each was charged with manufacturing candy containing sulphurous acid. Ten other manufacturers had hearings October 1.

Seniors Work at Phipps Institute.—The senior class of the Medical Department of the University of Pennsylvania began work in the Phipps Institute for the Prevention and Cure of Tuberculosis on October 3. Four sections of the class will visit the institute each week. There are between 200 and 400 out-patients under the care of the Phipps Institute, and part of the students' work will be visits to the sick, but much time will be spent in the laboratory under the direction of Drs. Henry R. M. Landis and Dr. Paul A. Lewis. The sociologic work will be directed by Alexander Wilson.

Personal.—Drs. Charles A. Oliver and William R. Newbold, and Dr. and Mrs. James A. Irwin have returned from Europe.——Dr. William W. Keen is in Berlin as the American delegate to the celebration of the one-hundredth anniversary of the founding of the University of Berlin.——Dr. John A. Kolmer, assistant bacteriologist of the bureau of health, Philadelphia, has been appointed pathologist to the Philadelphia Hospital for Contagious Diseases, vice Dr. Paul G. Weston, resigned.——Dr. DeForrest Willard, professor of orthopedic surgery in the medical school of the University of Pennsylvania, and Dr. J. William White, Barton, professor of surgery, have resigned.

Douglas Hospital Needs Funds.—The creditors of the Frederick Douglas Hospital have been sufficiently satisfied to prevent the sale of the building, but it has been announced, however, that the institution is badly in need of money to carry on its work. This hospital was founded 15 years ago by Dr. Nathan F. Mossell, for the purpose of treating persons of the negro race, opening the way for practical hospital experience to negro doctors and the establishment of a training school for negro nurses. It has treated 40,000 cases; the building it occupies was erected and equipped at a cost of $100,000, but it bears the burden of a $64,000 debt. Though the staff of physicians is composed of negroes, there is an advisory board of prominent white physicians. Among these are: Drs. S. Weir Mitchell, William W. Keen, G. H. MacKenzie, Howard F. Hansell, Charles K. Mills, James Tyson, Roland G. Curtin and John M. Baldy.

UTAH

Medical Inspection of Schools.—The Provo City Board of Education has adopted a system of medical examination for the city schools, and has appointed Dr. Ephraim G. Hughes, city physician, as medical inspector.

New Hospital Opened.—The Judge Mercy Hospital, Salt Lake City, opened to receive patients September 10. The hospital will accommodate a number of private patients and the third floor, devoted to employees of the Oregon Short Line, will accommodate fifty patients. The institution will be conducted under the supervision of the Sisters of Mercy.

State Society Meeting.—The Utah State Medical Association held its sixteenth annual meeting in Salt Lake City, October 3 and 4, and elected the following officers: president, Dr. Frederick W. Taylor, Provo; vice-presidents, Drs. Richard A. Pearse, Brigham City, William R. Tyndale, Salt Lake City, and Heber E. Robinson, American Fork; secretary, Dr. W. Brown Ewing, Salt Lake City, and treasurer, Dr. James N. Harrison, Salt Lake City.

WASHINGTON

Personal.—Dr. Frederick T. Hyde, Weston, Mass., has moved to Seattle to practice gynecology.——Dr. George K. McDowell, Spokane, has been elected president of the Southland Rubber Company.

City Hospital Staff Appointed.—Dr. James E. Crichton, commissioner of health of Seattle, announces the following staff

of the City Hospital: Chief medical inspector, Dr. Frank S. Bourns; medicine, Drs. Clarence A. Smith, Walter C. Lippincott and Herbert E. Coe; surgery, Dr. Park W. Willis; gynecology and obstetrics, Dr. Robert M. Stith; otology, laryngology and rhinology, Dr. C. Benson Wood; ophthalmology, Dr. Edmund B. Burwell; pediatrics, Dr. John B. Manning; neurology, Dr. Donald A. Nicholson, and dermatology, Dr. Louis H. Redon.

Hospital Notes.—The trustees of Noble Hospital, Seattle, have elected the following officers: president, Dr. Alfred Raymond; vice-president, Dr. Guy S. Peterkin; secretary, Dr. Louis H. Redon; treasurer, Dr. Frank T. Maxson, and superintendent and general manager, Dr. Charles S. Noble. The hospital will be located at Kilbourne and Woodland Park Avenues. The first section is to cost $20,000.——The City Hospital has been opened in Montesano by Drs. Joseph H. Fitz and Guy E. Marcy. The building contains a large ward for men, a smaller ward for women and six rooms for private use.——The question is to be agitated in Seattle of the establishment and maintenance on Puget Sound of a floating hospital similar to that which is in such successful operation in Boston.

WISCONSIN

Anonymous Gift to Hospital.—The president of the board of directors of the Kenosha Hospital Association has received a draft for $10,000 to be placed in the general fund of the hospital, with the announcement that the donor did not desire any name to be used in connection with the gift.

Women Physicians Meet.—At the annual meeting of the Wisconsin Medical Women's Association, held in Milwaukee, September 15, the following officers were elected: president, Dr. Belle P. Nair, Fort Atkinson; vice-president, Dr. Lucia Hoyer, Milwaukee; secretary, Dr. Minnie M. C. Hopkins, Oconto, and treasurer, Dr. Johanna M. Droppers, Milwaukee. The association passed a resolution authorizing the appointment of a committee to confer with the State Board of Health regarding a public educational campaign on germ carriers.

GENERAL NEWS

X-Ray Society Election.—The annual meeting of the American Roentgen-Ray Society was held in Detroit, September 28 to October 1, and the following officers were elected: Dr. Percy E. Brown, Boston, president; Dr. Frederick H. Baetjer, Baltimore, secretary, and Dr. Charles F. Bowen, Columbus, Ohio, treasurer.

Eye Men Meet.—The American Academy of Ophthalmology and Otolaryngology held its annual meeting in Cincinnati, September 19-21. The following officers were elected: president, Dr. John J. Kyle, Indianapolis; vice-presidents, Drs. F. Park Lewis, Buffalo, Samuel Iglauer, Cincinnati, Burt R. Shurly, Detroit; secretary, Dr. George F. Suker, Chicago (reelected), and treasurer, Dr. Secord H. Large, Cleveland. Indianapolis was selected as the place of meeting for next year.

Erie Surgeons Meet.—The nineteenth annual meeting of the Association of Erie Railroad Surgeons was held in Chicago, October 4 and 5. The following officers were elected: Dr. William M. Bemus, Jamestown, N. Y., president; Dr. Herbert F. Gillette, Cuba, N. Y., vice-president; Dr. Bertis R. Wakeman, Hornell, N. Y., secretary-treasurer (reelected); and Drs. John G. Kelly, Hornell, N. Y., Salem Heilman, Sharon, Pa., and H. P. Jack, Canisteo, N. Y., executive committee. The next meeting is to be held in the Astor House, New York City.

Protection of Eyes of Sailors.—A special effort is being made by the Surgeon-General of the Navy to provide for the protection of gun-pointers and other enlisted men whose duties require keen eyesight, and Surgeon Eugene J. Grow has been detailed to the U. S. SS. *Solace* for special duty on this subject. The illumination of fire-rooms, of dynamo-rooms, and living spaces generally will have especial study, and recommendations will be made for the improvement of conditions. The eye-conditions of men detailed to adjust carbons on searchlights will be safeguarded in the future by special goggles or screens to cut off the actinic rays.

New Insurance Examiners Society.—The Society of Insurance Medical Officers was organized in Chicago, October 3, the avowed purpose being "to establish an organized center of thought and action for the advancement of medical knowledge appertaining to life insurance by personal intercourse of its members, presentation of papers, discussions, and such other methods as may from time to time be found desirable." The following officers were elected: president, Dr. Allison Maxwell, Indianapolis; vice-presidents, Drs. Calvin H. English, Fort Wayne, and Stephen S. Werth, Chicago; secretary, Dr. Edgar R. Hawley, Chicago, and executive committee, Dr. William F. Milroy, Omaha, C. Naumann McCloud, St. Paul, Joseph W. Johnson, Chattanooga, Russell M. Young, Des Moines, and Mason M. Lairy, Lafayette, Indiana.

FOREIGN NEWS

Cholera Death in England.—Foreign telegrams announce that the first death from Asiatic cholera in England occurred October 6, when a man who had been living in a lodging house in London, died in a public hospital.

Death of Professor Chrobak.—The cable brings word of the death of the noted Vienna gynecologist and surgeon, Professor Rudolf Chrobak, aged 70. He retired from the chair of gynecology two years ago, before reaching the age limit, as he felt the necessity of handing over the newly completed gynecologic clinic to younger men. He has been connected with the university since 1870, and has written numerous valuable articles on gynecology and obstetrics.

Death of von Leyden.—Cable dispatches announce the death, at the age of 78, of Ernst von Leyden, the eminent Berlin internist, to whom the Germans ascribe in large part the transformation in clinical instruction in the seventies. He was at first an army medical officer and then was called to a professorship at Königsberg, then succeeded Traube at Berlin and took charge of the first university medical clinic there in 1885. Since he founded the *Zeitschrift für klin. Medizin*, in 1879, his works have been published mainly in this journal. He was also instrumental in founding, in 1898, the *Zeitschrift für phys.-diätet. Therapie*, with Goldscheider, and with F. Klemperer, has published the *Deutsche Klinik* since 1900. He also, with Gerhardt and B. Fraenkel, published the *Zeitschrift für Tuberkulose- und Heilstättenwesen*, and also issued the *Zeitschrift für Krebsforschung*. All these journals used to contain frequent articles from his pen, especially on nervous diseases and cancer. He founded, in 1881, the Berlin Verein für innere Medizin and was long its president, and was the recipient of numerous honors at home and abroad during his long career.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Oct. 1, 1910.

Flies as Carriers of Infection

The Medical Department of the Local Government Board has for some time been conducting inquiries into the action of domestic flies as carriers of infections of various kinds, and has just publlished a third report on the subject. It contains observations by Dr. Graham-Smith on the ways in which artificially infected flies carry and distribute pathogenic and other bacteria, and there is also a summary by Dr. Bernstein of literature relating to the bionomics of *Epsuma muscæ*, a parasitic fungus by which large numbers of flies are destroyed. The manner of catching and keeping flies and the general character of the experiments are described. Diagrams are given showing the anatomy of the insects and the manner in which they may deposit tainted material on any surface on which they either feed or walk. Abundant evidence of the infective power of flies which had been fed on pure cultures of disease-producing bacilli has been obtained, but it is regarded as improbable that under natural conditions such feeding could occur. The effects of contaminating flies with non-pathogenic and putrefactive bacteria have not yet been studied, and the effects of season, temperature, atmospheric conditions, different diets, irregular and scanty feeding, and other disturbing factors have not received sufficient attention. The conclusion is drawn that under exceptionally favorable conditions certain bacteria can be recovered from the contents of the alimentary canal and fecal deposits of infected flies for several days after infection and that these flies are capable of infecting certain materials on which they feed, for several days.

Suicide of a Physician in Consequence of an Unfounded Charge

Some time ago, an inquest was held on an old man whose physician committed suicide in consequence of an unfounded charge of causing the man's death. The inquest showed that

the man had died from natural causes and that the physician's treatment had been proper. The inquest on the physician himself has now been held. His name was Quodros and he was of Portuguese nationality. Under the will of the patient, he and members of his family benefited to the extent of $1,000 in an estate of $10,000. It is not unusual for patients to show their esteem for their physicians by legacies, but this circumstance seems to have aroused the unfounded suspicion of the relatives of the old man. They communicated with the police, but who made the communication and on what grounds was not disclosed at the inquest.

The detective who interviewed the physician said that the latter answered all questions satisfactorily but was highly nervous, which was attributed to his nationality. Next morning the physician was found dead in bed poisoned by prussic acid. He left a note stating: "I cannot face the disgrace of being charged. I am innocent." The coroner remarked that the unsatisfactory feature of the case was the fact that wrong information had been given to the police. There were, he said, persons with diseased imaginations who often did a great deal of harm by saying things without apparent cause and without understanding fully what they were talking about. The police were not bound to state who gave them the information, but he was sorry that the persons responsible had not come forward and by frankly admitting their mistake make what reparation they could to the relatives. As they had not done so he could only express his contempt at their action. The jury reached a verdict of "suicide during temporary insanity."

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 30, 1910.

Annual Meeting of French Gynecologists, Obstetricians and Pediatricians

The sixth Congrés français de gynécologie, d'obstétrique et de pédiatrie was held at Toulouse, September 22-27. Although the date conflicted with that of the International Congress of Gynecologists and Obstetricians held at St. Petersburg, there was a large attendance at the French meeting. The date had been fixed a long time beforehand, and most French specialists had remained faithful to it. In the opening address, Dr. Kirmisson, professor of clinical surgery at the Paris college of medicine, who presided, remarked that in view of the danger of depopulation, the physician ought, in all obstetrical cases, to make special efforts to save the child, and therefore it was necessary to have a full and exact knowledge of the entire history. Dr. Kirmisson proposed that a medical record be kept, which should be given to the mother at the time of the birth, in which the physician in charge of the case should have indicated the various incidents of the pregnancy and delivery.

The question of the pathogenesis and the treatment of the pernicious vomiting of pregnancy gave rise to a very interesting discussion. Dr. G. Fieux, *agrégé* professor at the Bordeaux college of medicine, believes that it is important, in the first place, not to forget the existence of simulators—women who are frightened by pregnancy, and who by force of desire, succeed in vomiting and growing thin to such a degree that they think that the physician's hand will be forced, and that he will be compelled to carry out their wishes. It is necessary, moreover, to differentiate vomiting which is prolonged and aggravated by toxemia from vomiting due to mixed causes, in which the toxic action is due to the nervous state of the patient. In the latter cases, while treatment is easy (suggestion, change of surroundings, isolation in a sanatorium), the condition is all the more deceptive among the patients whose vomiting seems to be really in consequence of the persistent and increasing toxemia. Treatment at the beginning should be almost entirely expectant, although we possess the means of heroic treatment, namely, evacuation of the uterus, which, however, ought not to be used until certain symptoms show that the woman's organism is unable to triumph over the toxemia. While many remedies are recommended in order to put an end to the vomiting while permitting the continuance of the pregnancy, they are mostly useless. Though we possess no means of acting directly on the toxemia of pregnancy itself, we have a means which, by preventing the digestive auto-intoxication from reinforcing the toxemia of pregnancy, will put the patient in better condition for resistance. This is a milk diet. Unfortunately in certain cases, a milk diet may augment the gastro-intestinal intoxication by the putrid transformation of the casein. In such cases it is better to give vegetable soup, water gruels, or even a little sheep's brains. In cases in which a milk diet is not tolerated, a hydrated diet in all its forms is prescribed (mineral waters, sweetened infusions, etc.). In cases in which the stomach rejects absolutely everything, the rapid dehydration should be combated by artificial serum given by hypodermic injections, or by high enemas. Pinard's experience leads him to conclude that as soon as the pulse-rate of a woman with toxic vomiting is permanently over 100, it is necessary to bring pregnancy to an end immediately (THE JOURNAL, May 14, 1910, p. 1623). Aside from all clinical considerations, such as pulse, temperature, loss of flesh, there are, according to Dr. Fieux, two complications which constitute immediate indications for an interruption of pregnancy; these are the appearance of polyneuritis, or of true icterus, characterized by the passing of biliary pigment in the urine. Whatever be the condition in which one finds one of these patients, it is never right, he says, to refrain from operation. However desperate the situation may seem, it is the physician's duty to evacuate the uterus as soon as possible. This procedure, rapidly executed, sometimes resuscitates an almost moribund patient. The best operative technic is that which without violence will permit total evacuation with the greatest rapidity. The use of laminaria tents, Hegar's bougies, and small Champetier de Ribes' bags almost always permits the rapid, if not easy attainment of a dilatation sufficient for the total evacuation of the uterus.

Dr. Lepage, obstetrician of the Paris hospitals, objects to the essayist's conclusions as too pessimistic. He believes that by appropriate treatment (a diet of milk, or milk and vegetables, with injections of artificial serum), abortion may often be avoided, while it is necessary to watch the patient closely in order to intervene without delay if necessary. It is difficult, however, to define the precise moment at which operation is necessary. A pulse of 100 is not an absolute criterion. In certain cases, moreover, the cessation of vomiting is not a favorable symptom at all; it indicates an extremely grave condition of which it is necessary to warn the family. Dr. Lepage held that in desperate cases operation should be resorted to, and that retention of the urine was an unfavorable sign. Dr. Achard, professor of general pathology at the Paris college of medicine, emphasized the tendency toward vomiting of certain individuals, in whom vomiting persists after the disappearance of the cause. In one case which he had observed, after a prolonged and absolutely useless course of milk diet, the patient's general condition improved and the vomiting ceased on a diet of broth and raw meat. Achard concludes therefrom, that one ought not to persist in a course of treatment which seems inefficacious, but should select another one, however opposed it may seem to the usual course in such cases. Dr. Pinard, professor of clinical obstetrics in the Paris college of medicine, said that he was astonished to hear Dr. Lepage advise against operation in desperate cases. Pinard believes that one should always attempt to save life; and that even when one foresees that the woman may die on the operating table, operation should be tried after the family has been warned.

Death of Professor Raymond

Dr. Fulgence Raymond, clinical professor of diseases of the nervous system at the Paris college of medicine, has just died at the Château de la Planche, near Poitiers. He was 66 years old. He was educated at the veterinary school of Alfort, where he became, in 1866, head of the department of anatomy and physiology. He wished, however, to become a physician, and at 33 he began the Latin studies necessary for his baccalaureate degree, and entered the medical school. In 1878 he was appointed physician of the hospitals, and in 1880 *agrégé* professor at the college. He was a pupil of Vulpian and of Charcot, and at the death of the latter he was almost unanimously chosen to occupy his place, which he held from 1894 until his death. He had been since 1899 a member of the Académie de Médecine. He had published his clinical lessons on the nervous system, and a book on the neuroses and psychoneuroses.

Measures Against Cholera

In consequence of the increase of cholera in Italy, the sanitary service has taken new precautions at Marseilles. All ships arriving from the infected regions will undergo quarantine at Friuli. They will be admitted into the port of Marseilles only on presentation of clean bills of health from the French consul of the port of departure. Fruits and vegetables coming from the regions affected by the epidemic will be absolutely excluded at the frontier

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 22, 1910.

Personal

Prof. L. Kuttner, medical director of the Rudolf Virchow hospital, has been appointed director in chief of the same hospital as the successor of Professor Goldscheider.

Campaign Against Ankylostomiasis

At the second international congress for industrial diseases held in Brussels a short time ago, the subject of hookworm disease was thoroughly discussed by physicians of various nations. An extensive report on this subject was made by the experienced director of the hygienic institute in Gelsenkirchen, Professor Bruns. He commented on the importance, both for prevention and treatment, of the worm-carriers. The difficulty of this task is shown by the fact that there are in the Ruhr coal districts about 350,000 miners. Microscopic examination of the stools seems to be the only reliable means of detecting the presence of the hookworm. The feces are mixed with powdered animal charcoal and placed for several days in the incubator, so that the larvæ develop from the eggs. By this means, devised by Leos, Bruns has obtained twice as many positive results as formerly. Of 8,000 persons with infected stools simple microscopic examinations gave positive findings in 40 per cent. but the cultural method yielded positive results in 90 per cent. For the treatment, extract of male fern was used with the best results. Bruns had 5 cases of blindness in 40,000 treatments. In prophylaxis, the greatest cleanliness is important; especially all contact with the stools must be avoided and no defecation permitted in the mines. As a result of application of these measures there has been a very satisfactory reduction of typhoid and dysentery as well.

Marine Convalescent Home

A seamen's convalescent home has been recently opened in a suburb of Berlin for the reception of the officers and crew of the navy and merchant marine and for the officials of the colonies who have fallen sick on the sea or in foreign countries and are in need of care during their convalescence. Sixty beds are provided; they have been endowed by private benevolence. The kaiser and kaiserin made the first contribution to this sum. The entire cost was $180,000 (750,000 marks).

Resolutions Voted by the German Medical Press Association

The general assembly of the Freie Vereinigung der deutschen med. Fachpresse was held at Berlin September 17, under the presidency of its business manager, Dr. Spatz, editor of the *Münchener med. Wochenschrift*. His report showed the satisfactory increase of the membership to about 150. Then the first and most important item of business, namely, the "reform in medical publication" was taken up for discussion. The following leading principles were adopted:

To avoid the excessive scattering of medical literature, the concentration of all publications in the regular periodicals is advocated. Especially the issuing of *Festschrifts*, special reports, annuals, etc. on the part of the scientific institutions and hospitals should be rigorously limited. The issuing of inaugural dissertations as separate publications is also objectionable. The essential content of such works should be published in brief in some periodical by the author or the director of the institution. In original communications the greatest possible brevity should be the rule. Repeated citation of compiled bibliographies is useless and exasperating. Journals should as far as possible publish only such articles as are suitable to their special field. Preliminary reports should in general present only actual facts. Their publication is to be limited as much as possible. To obtain as complete an outlook over the borderland subjects as possible, it may be advisable for journals publishing abstracts to exchange abstracts. It would be very desirable if the great special societies would favor the development of abstract work by supporting a special abstract journal. J. Schwalbe, editor of the *Deutsche med. Wochenschrift*, stated that, thanks to the united efforts of the medical press and the manufacturing chemists, there had been a marked reduction in the production of medical write-ups for pay. The drug manufacturers who formerly secured for a certain fee the publication of fraudulent articles by physicians have abandoned this mode of advertising since they have learned that the elaborate efforts of these mercenary writers will not be published in the journals belonging to the medical press association nor abstracted if they have appeared in other journals. In accordance with a resolution of the previous general assembly the names of physicians whose cooperation for other reasons is not desired by the journals of the association were also placed on the "black list." Finally also those journals whose editorial principles are objectionable on ethical grounds were published by name. In consideration of the fact that many of the designated authors and organs are repentant and have reformed, it was resolved on motion of the speaker presenting the report that their names be stricken from the list, from which it is to be assumed that they will hereafter abide by the principles of the medical press association. Still more important was another motion presented by this speaker which will seriously affect the drug trade. In order to counteract the deception of physicians by the false statements by manufacturers with reference to many medicinal preparations, a resolution was adopted, binding on the members of the association, that advertisements of medicines and other preparations which are objected to by the special committee in charge of the matter shall not longer be accepted by the journals which belong to the association, and of course write-ups of these objectionable preparations will be excluded from publication.

On motion of Dr. Joachim, it was resolved that at the next general assembly the adoption of a uniform method of literary references in medical publications should be discussed and he was empowered to make suggestions. Finally on motion of Dr. Schnirer, editor of the *Klin.-therap. Wochenschrift*, who referred to the objectionable occurrences which had accompanied the publication of the results of treatment with Ehrlich's "606," a resolution was adopted to the effect that the association announces that it will in future refuse to accept articles from authors who have communicated to the daily press the contents of an article before its appearance in the professional journal to which it has been presented.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 29, 1910.

Information About Free Hospital Beds

The decentralization of the hospital management in this city has often led to very alarming conditions; patients have been driven to several hospitals without obtaining a bed. Recently, when on account of climatic conditions there was really a scarcity of such accommodation, it has happened that children died in the arms of their mothers while seeking help for hours and hours without being admitted to the ward. Now in the Vienna General Hospital a bureau has been installed by the government which will receive every morning and every evening from all charitable institutions in this city by telephone authentic information of all vacant beds and beds to be vacated within the next twelve hours. As soon as one of these beds is occupied again, the fact will be telephoned at once to the bureau. Thus, whenever a bed is wanted, any policeman or doctor may at once inquire when and where the patient can be accommodated. This has been done especially under the pressure of the cholera scare, in order to prevent a prolonged stay of an infectious patient in a household.

The Hungarian Institutions for the Care of Children

From the data now obtainable, it appears that upward of 50,000 children are cared for by the government in Hungary, and that an equal number have outgrown this care and either have been given back to their parents or have become independent members of society. There are sixteen such institutions in the country, and every Hungarian-born child has a right to apply for state care, if it has no maintenance or supporter; no documents are asked for, but a special inquiry office tries to find out the true reason why the child is not cared for by its family. The system of bringing up such children, if they are healthy, in suitable state-controlled agricultural households is very useful, for it provides healthy laborers, badly wanted in the country. Ill or weak children are properly cared for in hospitals and other institutions attached to the children's homes. One very commendable feature of this scheme, which altogether costs the state some $400,000 a year, is the continuation of the family bonds between the child and its relations. The child is, so to say, only entrusted to the state for education, as it was in ancient Sparta, but still the members of the family are free to visit it as often as they choose, provided they exert no bad influence. This very modern—in fact, unique—experiment on a great scale was much commented on by the members of the last Congress in Budapest, and really is due partly to political, partly to social considerations.

Marriages

FREDERIC ATWOOD BESLEY, M.D., to Mrs. Myra E. Busey, both of Chicago, October 6.

DANA WARREN DRURY, M.D., Boston, to Mrs. Elizabeth Small Boyce, at Baltimore, September 30.

HARRY B. HAYWARD, M.D., Hammond, Ind., to Miss Josephine C. Badenoch of Chicago, October 12.

ELMER EATON CURTIS, M.D., U. S. Navy, to Miss Rose Bearwald of San Francisco, September 20.

DANIEL BERNARD HAYDEN, M.D., Chicago, to Miss Julia Howard of Farmer City, Ill., October 8.

HENRY A. PFEIFER, M.D., Jackson, Wis., to Miss Frances Murray of Manawa, Wis., September 21.

HENRY CLAY MICHIE, M.R.C., U. S. Army, to Miss Louise Robertson, at Charlottesville, Va., September 30.

WALTER J. CLUTHE, M.D., Tell City, Ind., to Miss Marguerite Moore of Indianapolis, at Chicago, September 20.

WILLIAM WELDON PASCOE, M.D., Tacoma, Wash., to Miss Helen North Wright, at Dallas, Texas, October 12.

D. E. LYBROOK, M.D., Young America, Ind., to Miss Matilda Browne of Marion, Ind., at Indianapolis, September 26.

WILLIAM BURGESS CORNELL, M.D., Hawthorne, Mass., to Miss Bettie Grace Duncan of Lutherville, Md., October 11.

Deaths

Edwin **Mills Nelson, M.D.** Miami Medical College, Cincinnati, 1874; a member of the Missouri State Medical Association; for ten years managing editor of the St. Louis *Courier of Medicine;* at one time lecturer in the St. Louis Medical College; clerk of the board of health, and attending physician at the Webster Orphan Asylum and St. Louis Maternity Hospital; one of the organizers of the St. Louis Training School for Nurses; died at his home in St. Louis, September 20, from disseminated sclerosis, aged 62.

Delorme **W. Robinson, M.D.** Kentucky School of Medicine, Louisville, 1882; a member of the American Medical Association, and the National Association of Railway Surgeons; formerly president, later superintendent and secretary of the South Dakota State Board of Health; local surgeon of the Chicago and Northwestern Railway Company, and chief of staff of St. Mary's Hospital, Pierre; died at his home in that city, September 26, from pneumonia, aged 55.

Abijah **I. Beach, M.D.** Western Reserve University Medical College, Cleveland, 1856; assistant surgeon of the Ninth Kansas Volunteer Cavalry during the Civil War; formerly United States pension examiner at Council Grove, Kan.; from 1881 to 1883 physician at the Tulalip Indian Reservation, Wash.; for twenty months surgeon of the Washington State Soldiers' Home; died at his home in Renton, Wash., September 25, from nephritis, aged 74.

George **Little, M.D.** University of Pennsylvania, 1884; a member of the Medical Society of the State of Pennsylvania; formerly president of Schuylkill County Medical Society; health officer of Tamaqua borough; deputy coroner and registrar for Tamaqua district, and local representative of the State Board of Health; died suddenly, while making a professional call in Tamaqua, October 3, from heart disease, aged 48.

Thomas **Everett Alsop, M.D.** Medical College of Virginia, Richmond, 1887; a member of the Illinois State Medical Society, and formerly president of the Clinton County Medical Society, and Clinton County Board of United States Pension Examiners, and coroner and member of the board of health of Clinton county, and physician to the county almshouse; died at his home in Carlyle, September 22, from heart disease, aged 50.

Hubert **Barnard Gudger, M.D.** University of Pennsylvania, Philadelphia, 1909; of Asheville, N. C.; died in the Grand Union Hotel, New York City, October 2, from an incised wound of the throat, believed to have been self-inflicted while despondent on account of ill health, aged 25.

Orville William Collins, M.D. Harvard Medical School, 1887; of South Farmington, Mass.; a member of the American Medical Association; local surgeon for the Boston and Albany Railroad for many years; a member of the staff of the South Farmington Hospital; died in Jefferson, N. H., September 5, from intestinal obstruction, aged 59.

George R. Vincent, M.D. University of Vermont, Burlington, 1865; a member of the State Medical Society of Wisconsin; for several years president of the village board of Topah, and a member of the state legislature in 1879; died at his home, September 11, from cerebral hemorrhage, aged 69.

George W. Shepherd (license, Ind., 1897); a member of the American Medical Association; a veteran of the Civil War, and a member of the local board of pension examiners; the oldest practitioner of Jay county, Ind.; died in Redkey, September 26, from cerebral hemorrhage, aged 71.

Peter E. Richmond, M.D. McGill University, Montreal, 1873; of Mount Pleasant, Mich.; a member of the American Medical Association; and a member of the local board of pension examining surgeons; died suddenly in Saginaw, September 19, from fatty degeneration of the heart, aged 64.

George Franklin Witter, M.D. University of Michigan, Ann Arbor, 1856; of San Jose, Cal.; a member of the American Medical Association, and formerly president of the State Medical Society of Wisconsin; was struck by an automobile and instantly killed, October 2, aged 80.

Joel M. Partridge, M.D. Hahnemann Medical College, Chicago, 1868; of South Bend, Ind.; a veteran of the Civil War; formerly a teacher in Berea (Ky.) College; died in Epworth Hospital, South Bend, September 30, after an operation for disease of the kidney, aged 75.

Fred Norris Brett, M.D. Rush Medical College, Chicago, 1896; a member of the American Medical Association; surgeon to St. Mary's Hospital, Green Bay, Wis.; and a member of the city council; died at his home, September 23, from pulmonary edema, aged 40.

Thomas Drury Edwards, M.D. University of Tennessee, Nashville, 1884; a member of the American Medical Association, and a specialist on diseases of the eye, ear, nose and throat; died at his home in Union City, Tenn., May 15, from gastric ulcer, aged 54.

Jared Spooner, M.D. University of Michigan, Ann Arbor, 1871; University of Pennsylvania, 1890; a member of the Indiana State Medical Association, and a veteran of the Civil War; died at his home in Peru, September 25, from multiple neuritis, aged 64.

Noah Howard Burt, M.D. University of Pennsylvania, 1895; president of the board of health of Ocean City, N. J., and medical inspector of the public schools; died at the University Hospital, September 24, after an operation for appendicitis, aged 50.

Benjamin F. Redshaw, M.D. Northwestern University, Chicago, 1899; of Curran, Ill.; a member of the American Medical Association; was instantly killed in a collision between interurban trolley cars, near Staunton, Ill., October 4, aged 46.

Henry C. Ganaway, M.D. Meharry Medical College, Nashville, Tenn., 1902; of Decatur; a member of the Illinois State Medical Society; was instantly killed, October 4, in an interurban trolley line collision, near Staunton, Ill., aged 35.

Elias Bedell Boyce M.D. Albany (N. Y.) Medical College, 1858; for two terms supervisor and for one term coroner of Rensselaer county, N. Y.; died at his home in Averill Park, September 23, from cerebral hemorrhage, aged 72.

William Cowpe Gardner, M.D. Long Island College Hospital, Brooklyn, 1892; a member of the Medical Society of the State of New York; died at his home in New York City, September 28, from heart disease, aged 55.

Whitfield Stephen Coursen, M.D. College of Physicians and Surgeons, New York City, 1848; said to have been the oldest practitioner of New Jersey; died at his home in Oak Ridge, September 25, from pneumonia, aged 86.

Alexander A. Walter, M.D. Imperial University of St. Vladimir, Kieff, Russia, 1872; for fifteen years a surgeon in the Russian service; died at his home in Grand Rapids, Mich., September 19, from diabetes, aged 55.

Charles D. Moore, M.D. University of Louisville, 1850; a veteran of the Mexican War, and a surgeon in the Federal service during the Civil War; died at his home in Cane Valley, Ky., September 26, aged 84.

Charles Joseph Dowling, M.D. Baltimore Medical College, 1906; of Springfield; a member of the Massachusetts Medical Society; died in Mercy Hospital, Springfield, September 26, from uremia, aged 30.

Archie Allego Sweet, M.D. Ohio Medical University, Columbus, 1905; a member of the Ohio State Medical Association; died at his home in Mingo Junction, September 30, from typhoid fever, aged 30.

Theodore Romeyn Hornblower, M.D. College of Physicians and Surgeons, New York City, 1871; of Jersey City, N. J.; died at his summer home in Allendale, N. J., August 7, from dropsy, aged 65.

Oliver Cromwell Wilson, M.D. Starling Medical College, Columbus, Ohio, 1897; formerly of Benwood, W. Va.; died at his home in McMechen, W. Va., September 24, from heart disease, aged 37.

Archelaus Smith Davison, M.D. Eclectic Medical Institute, Cincinnati, 1891; a practitioner for thirty-five years; died at his home in St. Clair, Mo., February 20, from organic heart disease, aged 68.

Augustus Clay Lucas, M.D. New York University, New York City, 1876; of Minoqua, Wis.; died in that place, September 6, from concussion of the brain following a fall down stairs, aged 56.

John W. Huckins, M.D. California Eclectic Medical College, Los Angeles, 1886; for many years a practitioner of Vallejo, Cal.; died at his home in San Francisco, September 24, from septicemia.

Henry Robert Wilson, M.D. New York University, New York City, 1873; of Santa Barbara, Cal.; died in the Loma Linda Sanatorium, March 27, from acute gall-stone colic, aged 64.

Albert Warren Shoup, M.D. Louisville (Ky.) Medical College, 1894; of Battle Ground, Ind.; died at St. Elizabeth's Hospital, Lafayette, September 12, from hepatitis, aged 53.

Oscar F. Thomas, M.D. Northwestern University Medical School, Chicago, 1882; died suddenly at his home in Lakeland, Minn., September 28, from heart disease, aged 67.

James S. Hollopeter, M.D. St. Louis College of Physicians and Surgeons, 1893; died suddenly at his home in Houston, Ohio, September 20, from heart disease, aged 51.

Roy Samuel Porter, M.D. State University of Iowa, Iowa City, 1903; of Moline, Ill.; died in the Watertown State Hospital, August 31, from general paresis, aged 35.

Louis Edward Cook, M.D. Eclectic Medical Institute, Cincinnati, 1882; of Forest, Ohio; died suddenly in his automobile, September 23, from heart disease, aged 51.

John Erhard, M.D. Long Island College Hospital, Brooklyn, 1896; died at his home in College Point, Flushing, L. I., September 28, from tuberculosis, aged 48.

John F. McKinney, M.D. Eclectic Medical Institute, Cincinnati, 1876; died suddenly at his home in Arcola, Ill., September 14, from heart disease, aged 63.

Frank Johnston, M.D. College of Physicians and Surgeons, Baltimore, 1883; died at his home in Trenton, N. J., September 24, from nephritis, aged 55.

Daniel M. Dunn, M.D. Western University, London, Ont., 1894; a member of the Arkansas Medical Society; died recently at his home in Dell, Ark.

Thomas Andrew Dillon (license, ten years practice, Ohio); an eclectic practitioner of Dayton; died recently at his home, from heart disease, aged 53.

William Burriss, M.D. Pulte Medical College, Cincinnati, 1886; died at his home in Burrton, Kan., September 13, from general breakdown, aged 71.

William H. Woodbury, M.D. Hahnemann Medical College, Chicago, 1866; died at his home in Chicago, October 6, from paralysis, aged 85.

James K. Stout, M.D. Kentucky School of Medicine, Louisville, 1866; died at his home in Omaha, September 26, from anemia, aged 67.

Max Levy, M.D. Tulane University, New Orleans, 1876; died at his home in New Orleans, September 16, from heart disease, aged 59.

Henry S. Smith (license, forty-seven years of practice, Ky., 1894); died at his home in Woodville, Ky., September 18, aged 92.

Lewis Sterling Bowles, a practitioner of Paoli, Ind., for many years; died at his home, September 18, from meningitis, aged 76.

Thomas Hay, M.D. University of Pennsylvania, Philadelphia, 1861; died at his home in Philadelphia and was buried, Nov. 4, 1909.

James Cherry, M.D. Jefferson Medical College, 1871; died recently at his home in Eden, N. Y., from bronchitis, aged 62.

Isaac N. Van Pelt, M.D. Cincinnati; died at his home in Lamar, Mo., July 22, from rheumatism, aged 72.

Pharmacology

Solubilities of the Pharmacopeial Organic Acids and Their Salts

The determination of solubilities is a matter of great importance and the data given in chemical works are frequently unsatisfactory. It is often assumed that the determination of solubility is a very simple matter, whereas it is sometimes a difficult undertaking and the results obtained even by good observers frequently do not agree. This is probably due to the fact that very few men have worked under identical conditions, either of the purity of the substance or of the solvent, or of equally exact temperature, or regulation or care in securing the saturation of the solution. As data on solubility will enter into the next edition of the Pharmacopeia, it is important that they should be as accurate as possible.

The work of Atherton Seidell on the solubilities of the pharmacopeial organic acids and their salts published in *Bulletin 67*, of the Hygienic Laboratory, Public Health and Marine-Hospital Service, is opportune and will be of great value to the Committee on Revision. Some interesting conclusions are pointed out: his results in the examination of 35 compounds show that satisfactory agreement with the figures of the Pharmacopeia exists only in the case of benzoic, camphoric, gallic and tartaric acids, in the aqueous solutions, and of benzoic acid, ammonium benzoate, ammonium salicylate, salicylic acid and phenyl salicylate in the alcoholic solutions. Of the remaining results, the differences vary from about .5 to 100 per cent. His experiments show that impurities do not affect the solubility sufficiently to make solubility determinations reliable as tests of purity. He does not advise the introduction of a standard method for solubility determinations into the U. S. Pharmacopeia; he finds that in no case is it possible to predict from the solubility of a substance in alcohol and water separately what it will be in any mixture of these two solvents. The pharmacopeial statements in regard to the reaction of a number of salts toward indicators should be revised. Seidell recommends certain improvements in the pharmacopeial methods of assay and quantitative analysis.

This work is another example of the value of the scientific investigations which are being undertaken by the hygienic laboratory, a work which is affording great assistance to the advance of medicine in all its departments.

ADVERTISING SPECIALISTS CONVICTED OF FRAUD

W. H. Hale, A. S. Dyar and Roland Register Receive Heavy Fines and Prison Sentences

Again the federal authorities have done the public a service by protecting it from the machinations of medical impostors. W. H. Hale of Jackson, Mich., a quack with a penitentiary record, connected himself with A. S. Dyar and Roland Register, two "advertising specialists" who operated separate institutions in New Orleans. The scheme was to have Hale pose as a "noted London specialist" who was visiting New Orleans and who had offered to assist each of the local "specialists" in giving professional advice to such victims as they might get as patients. The mailing lists of Dyar and Register were brought into service and a "strictly personal" circular letter was sent to several hundred past and prospective victims of these two "specialists." The letters offered the "patients" an opportunity of getting the "noted" visitor's opinion on their cases if they would call at the office of the local "specialist." The details of the case follow:

Dyar and Hale were charged and tried separately from Register and Hale. In each case the defendants were charged first, with having used the post-office of the United States in the execution of a scheme and artifice to defraud, previously formed; second, with having conspired to commit an offense against the United States, namely, the use of the mail in the execution of the scheme to defraud as set forth in the

first count. The case against Dyar will be described; that against Register was practically identical with it.

The scheme to defraud was executed by the mailing, by the defendant Dyar, in the case in which he and Hale were defendants, of a "form" letter made to appear as if in typewriting, addressed to two thousand or twenty-five hundred different persons, some of whom had been Dyar's former patients, and had ceased to consult him, and others of whom had interviewed him with a view of taking his treatment but who never took treatment from him. The letter follows:

NEW ORLEANS, Feb. 27, 1908.

"*Dear Sir*:—I hope you will pardon this letter, but when you have read it, I know you will. It is natural that I feel a deep interest in those consulting me regarding their physical condition, and especially in those I have treated and also in those I am still treating. I feel that you know that I have been perfectly sincere and honest in everything that I have done and said, that I have always studied your case carefully and earnestly endeavored to deserve your confidence and friendship—in other words I have tried to act out the Golden Rule.

"The fear that I have not cured you has been causing me some worry. Meeting Professor W. H. Hale, M.D., of London, England, the noted expert in genitourinary diseases, who is just now on a visit to the United States, and with whom some years ago, I had a very close acquaintance, I took the liberty of consulting this noted gentleman about your case. He gave me much light and assured me that there was a safe and permanent cure for your trouble.

"So delighted was I, that I have, after much persuasion, secured Professor Hale's promise to spend next Thursday, Friday and Saturday and Sunday, March 5th, 6th, 7th, and 8th WITH ME, on which occasion he will meet you, give you a consultation and whatever advice necessary, for which there will be no CHARGE WHATEVER to you.

"When you stop to think that as a rule Professor Hale charges from $100 to $1,000, for consultation alone, you can possibly understand what it means to you to get the benefit of his valued services without any charge whatever, and because of his personal friendship for me, he has consented to see a limited number of patients, of whom you are one.

"Professor Hale is regarded as one of the greatest living specialists in Nervous, Chronic and Special Diseases. I, therefore, ask you to call at my office on either of the days mentioned: Namely: Thursday, Friday, Saturday or Sunday, March 5th, 6th, 7th, and 8th, at any hour that suits your convenience, between 9 a. m. and 8 p. m., as the doctor will be with me each day during these hours.

"I can hardly express to you the pleasure and satisfaction I experience in having Professor Hale visit me, and I hope that you will avail yourself of my efforts in your behalf.

"Yours in the cause of Health,

A. S. DYAR, M.D."

This letter was evidently designed to deceive those who received it into believing that it was a special letter to each of them. This deception was emphasized by the statement in each letter that Dyar had been much worried by the fear that he had not cured each of the twenty-five hundred individuals, and further by the statement that he had consulted "Professor W. H. Hale, M.D." in regard to the cases of each of the different individuals to whom the letter was sent, and further by the statement that "Professor Hale" had given him (Dyar) much light and had assured him that there was a safe and permanent cure for the trouble of each of the various persons.

The so-called Professor Hale who was represented as being of London, England, just then on a visit to the United States, was, as a matter of fact, and had been, for the last nine or ten years, previous to the mailing of the letter in February, 1908, a resident and a registered voter of Jackson, Michigan. Some years previously Hale operated the "British Medical Institute" at Jackson. This was a typical "lost manhood" concern and did a thriving business until Hale was prosecuted under the medical practice act and his "institute" closed. He then began his itinerant career as the "great London specialist."

Physicians of prominence and standing in the branches of their profession in which Hale was represented to be an expert showed that Hale was not known and had never been heard of by them and that if he had been a noted expert in the branches of the profession mentioned and "one of the greatest living specialists," as represented in the letter, they would have known of him. The proof in regard to Hale, however, went considerably further, and showed that in 1891 he had been indicted in the United States District Court in Denver, Colorado, for the crime of having used the mails in a scheme to defraud.

Hale's method in Denver consisted in practicing under the ficticious name of a Chinese doctor, "Dr. Gun Wa," who by the use of Chinese herbs that he professed to have, claimed to make remarkable cures. After the indictment in Denver, Hale seems to have fled to England, for in 1892 he was indicted in Liverpool, England, for the fraudulent practice of medicine, in connection with some other man, who together promised to cure catarrh and catarrhal deafness, and prom-

Dr. A. S. DYAR
Physician, Surgeon and Specialist
619 Canal St., cor. Exchange Place,
New Orleans, La,
Young, middle aged and old, single and married men and all who suffer with Lack of Energy, Impoverished Blood, Pimples, also Blood and Skin Diseases, Syphilis, Eruptions, Hair Falling, Bone Pains, Sore Throat, Ulcers, Swellings, Effects of Mercury, Kidney and Bladder Troubles, Weak Back, Burning Urine, Stricture, receive searching treatment, prompt relief and cure for life. Both sexes treated confidentially and privately. Piles, Fistula, Fissure and Rupture, Nervous Debility, Failing Memory. All cases can be as successfully treated by mail as by personal interview. Send for Perfect Question List. Address
DR. A. S. DYAR, "The Specialist."
619 Canal St., cor. Exchange Place,
New Orleans, La.

One of Dyar's advertisements; Register also advertised in a similar way. Hale for some years operated the "British Medical Institute" at Jackson, Mich. This was a "lost manhood" concern of the usual type.

ised to furnish medicines for this purpose, all of which claims were false.

He was tried under this indictment in England, and sentenced to serve a period of eighteen months in the penitentiary at Walton, England. On his return from England to the United States, after the expiration of his sentence in England, he was arrested in New York under the Denver indictment and taken back to Denver where he was tried and convicted and sentenced to serve a period of eighteen months in the penitentiary.

After the expiration of his sentence, he seemed to have gone to New York, for in 1895, he was there indicted in connection with some other man for grand larceny of $1,500 from one John McCallum, whom Hale told that he was suffering with serious kidney trouble, from which he would soon go crazy or die and of which they would cure him by means of what they called "radium cure." On these representations he charged McCallum $1,500 for a small vial of "radium cure." Hale pleaded guilty to this indictment and was sentenced to a term of eight months in the penitentiary at Blackwell's Island, New York.

In addition to the above evidence, proving that Hale was not a noted expert, or one of the "greatest living specialists" as he was represented to be in the letter, several physicians from Ohio and Michigan testified regarding Hale's standing in the profession and as to whether or not he was entitled to practice medicine in Ohio where he claimed to have graduated from the American Eclectic College of Medicine, or in Michigan where he resided. The evidence of these physicians, two of whom were secretaries of the state boards of health of Ohio and Michigan, respectively, showed that the American Eclectic College had been investigated by these two states and was not in good standing, and the diplomas therefrom were not recognized as authority to practice medicine and that, although Hale had applied for re-registration under the laws of Michigan, his application had not been granted and he was not and had not been for some years authorized to practice medicine in Michigan. Of course, Hale produced physicians of his class from New York, Chicago and elsewhere, who swore to his excellent standing as a surgeon and diagnostician, and he referred to having license to practice medicine in Maine, Arkansas and Oklahoma.

Hale, Dyar and Register were found guilty and were sentenced to pay fines varying from $1,000 to $5,000 and to serve terms in the federal prison of from twelve to eighteen months each. United States District Attorney Charlton R. Beattie and Postoffice Inspector F. J. G. Pulsifer deserve great credit for the successful outcome of these cases; they have done the public a substantial service.

Correspondence

The Part Played by the American Medical Association in the Improvement of Medical Education

To the Editor:—It was with the keenest pleasure that I read your editorial in THE JOURNAL, May 21, 1910, on the reorganization of the Medical Department of Washington University, St. Louis. There is much that is of midnight darkness in American medical education; but, thanks to an awakening realization of conditions, there are also some rays of light, and one of them is this re-born medical school with its magnificent endowments and clinical facilities, its distinguished faculty, and chiefly its true scientific medical spirit, as evidenced in the educational standards laid down and in the selection of the men who will direct its medical destinies. As you suggest, its influence on medical education in that part of the country will be profound. May its educational requirements rise higher every year, and its light gleam brighter.

In this reorganization we see an illustration of what the American Medical Association, through its Council on Medical Education, is accomplishing for decent medical schooling in the United States. Many and diverse are the lines along which the Association is doing yeoman service; but in none of them does it appear that more credit must ultimately redound to this national Association, and a more lasting good to the whole people, than in its work for the reform of medical education.

The education and training of physicians in this country has been, hitherto, largely a commercialized disgrace and a national shame that has made the name of so-called American medical colleges, with a few exceptions, a by-word in other civilized countries. Disastrous enough has been this national crime to a credulous people. Who can compute the fearful toll in blood and life that has been exacted from them through the ignorance and incompetence of youthful, quiz-made physicians, suddenly turned loose on an undiscriminating public? How many of these men were morally and mentally unfit to assume the enormous responsibilities that are of necessity placed on the shoulders of every practicing physician? Armed with the miraculous sesame of M.D., and clothed with mystery, they have marched forth in annual armies to heal and to make glad; but alas, also, to learn many necessary things in sorrow and bitterness to themselves and to their patients. The majority of these men should have been more adequately trained for the practice of their profession, and some of them should have been eliminated as not being especially qualified for the high calling of physician. Not the least of the advantages of a thorough preliminary and medical education is the remorseless elimination that the process silently accomplishes. A few naturally good physicians may thus fail to get their diplomas, but such an injury to few individuals is not to be compared for a moment with the great good that will come alike to the profession and the laity by the exercise of a long-continued selective and eliminative education that will well test the inherent worth of all candidates for the degree of doctor of medicine. Of course, no system of medical education can give the young doctor just stepping into private practice that knowledge which comes only with long years of experience and observation; but, other good things being equal, the more matured and the more thoroughly trained, the young practitioner, the less he will learn in his early practice at the expense of his patients.

It is high time that the profession as a whole wakes up to its great responsibility for the proper education of medical students. To condone the disgraceful standards that prevailed during the last half of the nineteenth century, and which still exist to a considerable extent, is nothing short of criminal negligence. The country is so well supplied with medical men that there cannot be the slightest danger of an under production, however much the standards for licensure may be raised. We have been paying too great heed to quantity; it behooves us in the future to look sharply to quality.

Already we have a few medical colleges of the first rank, standing out as beacon lights in the educational world; types of what medical schools should be, and will yet be in this country. We all know these schools both old and new and take a just pride in them and their high ideals, and in the power they are exerting throughout the land.

In the meantime, let a united profession strive to make for every school surviving the test, a standard in which a reasonable amount of preliminary education will be demanded for admission to its medical course; in which adequate and wholly satisfactory clinical and laboratory facilities must be furnished in compliance with minimal standards laid down by the proper authorities; in which full nine-month annual sessions are given; and in which at least a one-year hospital internship, or its equivalent, is required before the candidate is eligible to engage in private practice in any of the several states. With such standards or even approximately such standards, prevailing, I believe our dark problem of "150 medical colleges," would be solved for all time, and in an illuminating manner at that.

In conclusion, I wish to congratulate the American Medical Association and its leaders on what it has accomplished, and on the immense good that it will yet accomplish through the work of its Council on Medical Education. It has placed the medical profession and the general public deeply in its debt; and we have every reason to believe that this debt will be greatly increased in the future. The task before it of extricating medical education in the United States from the veritable slough in which it has lain these many years, is a labor and a problem worthy of the patience, perseverance, and intelligence that will finally bring about its solution.

GARFIELD G. MCKINNEY, M.D., U. S. Army.

Lumbar Puncture in Poliomyelitis

To the Editor:—Dr. Flexner's admirable paper on the important work of himself and co-workers on poliomyelitis, in THE JOURNAL, Sept. 24, 1910, p. 1105, interested me greatly. I disagree with him, however, in his advocacy of the routine and early use of lumbar puncture by physicians in suspected cases, and I cannot refrain from commenting on this question.

1. Until we have a definite serum to use, I see no value in determining by examination of the cerebrospinal fluid the presence of a slight lymphocytosis, especially since if done before paralysis has occurred, the puncture may be blamed by the relatives for the succeeding paralysis. As this lymphocytosis occurs early at a period when patients are rarely observed closely, lumbar puncture might be done later than the operator thinks he is doing it.

2. Is this slight lymphocytosis with subsequent clearing of fluid and constant increase of polymorphonuclear leukocytes characteristic of poliomyelitis only? In other words, I cannot see in what way it makes the diagnosis any more definite than the excessive perspiration, the irregular tremor, the irritability and extreme prostration, the frequent suppression of urine, etc., which mark the disease before paralysis occurs.

3. I have not had an opportunity to make many blood counts early, but have made them in over thirty cases shortly after paralysis, when an abnormal number of lymphocytes is present in the blood. Can this, a preferable method, not be used to help in the diagnosis?

4. Without any basis for my belief except personal convictions, I do not believe even so inocous a procedure as lumbar puncture advisable in these extremely prostrated subjects with their infiltrative edema and hemorrhage of the cord and of the meninges.

Further, until a definite germ and serum or vaccine are determined I believe that physicians should observe great care to counteract flail joints, contractures and consequent deformity after the paralysis has occurred.

EDWARD E. MAYER, Pittsburg, Pa.

[The above letter was referred to Dr. Flexner, who replies:]

To the Editor:—The reason for recommending that lumbar puncture be performed in cases of doubtful infantile paralysis is in order to arrive at the earliest practical moment at a correct diagnosis. We are still very ignorant of the real extent of the epidemics of poliomyelitis and are therefore, prevented from exercising due caution in limiting its spread. What we need especially to learn is the frequency with which cases of poliomyelitis that do not develop paralysis occur, and what the leading symptoms are in these instances, since the so-called abortive cases may be found to be the insidious means of the transmission of the infection. Moreover, there occurs, not uncommonly, a form of anterior poliomyelitis which simulates epidemic meningitis so closely as to be frequently confused with that disease. I can speak with certain knowledge on this point because of the frequency with which we have been called on to supply antimeningitis serum for the treatment of cases of anterior poliomyelitis, in which meningitic irritation was an early and prominent feature.

I am of the opinion, therefore, that lumbar puncture provides the one clinical method at present known for clearing up the diagnosis of atypical cases of poliomyelitis or for determining the nature of the typical affection prior to the appearance of paralysis. Whether the increase in lymphocytes of the circulating blood will suffice for the same purpose I do not know, but the suggestion made by Dr. Mayer is valuable and should be carefully investigated. I do not believe, however, that it is necessary or desirable to defer employing lumbar puncture for purposes of diagnosis until a specific form of treatment is discovered. It would seem necessary merely to recall the great value of lumbar puncture as an aid to the diagnosis of tuberculous and some other forms of meningitis, for which there are at present no specific remedies, to justify the employment of the procedure.

The question as to whether lumbar puncture is likely to be abused in the hands of the unskilled and inexperienced is another matter. Our experience with the antimeningitis serum leads me to think that it will rarely happen that those unskilled or inexperienced will undertake to employ the puncture. Indeed, I should say rather that inexperienced physicians will call on surgeons or others who are familiar with the procedure rather than undertake to carry it out for themselves. It should be noted, furthermore, that in order to arrive at a diagnosis by this means, laboratory knowledge is required, since the fluid secured must be submitted to microscopic and chemical examination, a fact which, in itself, introduces a limitation that would tend also to confine the method to the skillful.

I believe, however, that Dr. Mayer's warning to exercise great caution so that a misunderstanding does not arise on the part of the friends of the patient, who might otherwise attribute the development of paralysis to the puncture, is timely, and I also agree with him in advising that the puncture be not carried out in instances in which there is danger of such misinterpretation.

In conclusion, I would like to add a word on a point foreign to this letter. Since the publication of my paper in THE JOURNAL, I have learned of the prevalence of epidemic poliomyelitis during the past summer in three southern states, namely, Virginia, South Carolina, and Georgia.

SIMON FLEXNER.

American Medical Association of Vienna

VIENNA, Sept. 26, 1910.

To the Editor:—No doubt a great many of the readers of THE JOURNAL, especially physicians who are contemplating coming to Vienna for graduate work, and also those who have studied here, will be interested in hearing that on September 21 the American Medical Association of Vienna left its old quarters in the Café Klinik, where it had been for six years, and moved into new and permanent club rooms at 28 Schlösselgasse, opposite the main entrance to the General Hospital.

The club rooms consist of five large, handsomely furnished rooms most conveniently located, and will fill a long-felt want among the physicians who come to Vienna. The lounging-room is furnished with large armchairs, leather-covered divans, piano, etc. The reading-room and library is done in red, and the secretary's or business room in green. A pretty room has been arranged for the ladies, not only for the use of those studying medicine, but also for the wives and daughters of visiting physicians. Beautiful rugs cover all the floors and handsome curtains adorn the windows. The color schemes in each room have been worked out carefully, everything is harmonious and in good taste, and the A. M. A. of Vienna now has a home in which its members take pride. The association is greatly indebted to Dr. C. L. Chambers of Bismarck, N. D., Dr. D. B. Phemister of Chicago, Dr. W. H. Burmeister of Great Falls, Mont., Dr. F. W. Barton of Danville, Ill., and Dr. M. W. Jacobs of St. Louis, as it was owing to their efforts that the club rooms were established. The association selected Dr. Chambers for the presidency at an election held September 9. A good reference library is in the process of formation; a number of valuable medical works have already been contributed, and it is hoped that in a short time all the leading medical journals will be found on the library table.

The club rooms were formally opened with a large reception on the evening of September 21, and it was attended by nearly five hundred guests, including American physicians studying in Vienna, people from the American colony, and the various professors and instructors in the hospitals.

The present officers of the association are: Dr. C. L. Chambers, Bismarck, N. D., president; Dr. N. L. Linneman, Duluth, Minn., vice-president; Dr. M. W. Jacobs, St. Louis, secretary; Dr. R. F. Davis, Seattle, treasurer.

H. F. BENNETT.

Interstate Reciprocity in License to Practice

To the Editor:—The subject of interstate medical reciprocity is perhaps trite but is one, I am afraid, which will constantly recur until it is settled right and to the satisfaction of higher-class graduates of from ten to twenty-five years' standing. At present the bulk of the state laws are entirely in favor of the inexperienced tyro and the compend brigade. I am thoroughly in favor of good, stringent laws calling for high preliminary and professional requirements and I do not think any older practitioner should expect reciprocity unless he has above the average attainments which were in vogue at the time of his graduation. It is not to be expected that any physician of many years' standing, no matter how good a school he came from or how good his previous education, can successfully complete a state board examination on those fundamentals which he has long since forgotten save in their more or less practical application. In my opinion, boards were created to keep poorly qualified men out, not to harass those in good professional standing.

The question might arise: "How are we to know those of good standing without examination?" In answer I would say: Any man who can show evidence of having had a good preliminary education at the time of commencing the study of medicine and having subsequently graduated from a standard medical college, so recognized at that time, should be permitted to practice anywhere in the country. Any other course, short of a practical examination in the practical subjects, is a tyranny against which the masses of the older practitioners should rise up. A physician, after years of practice, may want to change his location for many reasons, among which may be unsuitable climate, unsuitable surroundings, lack of success owing to undue competition or because he desires to take up a specialty which is precluded in his present location. Now, under such conditions, no man or body of men has the right to say to a competent man, as measured by the standard above laid out: "You cannot practice here until you go through any examination we may prescribe." Take the men of the highest standing and best reputations in this or other countries, put them to such a general test and they will "fall down." See the fuss some of the physicians and surgeons of St. Louis made when it was hinted that they be given a practical examination on the subjects in which they were supposed to be expert. If a lot of theoretical stuff had been suggested they might have had reason to complain. The young graduate is primed for such examinations and it is right that he should take them, but the older competent physician of from ten to thirty years' standing should be exempt from such ordeals. A man of such years has business and family cares which prevent his preparing for examinations and it ought not to be required of him.

Reciprocity as we have it to-day is not reciprocity at all and the older, qualified members of the profession should be recognized, peacefully if possible, but they should be recognized.

H. E. Dunlop, M.D.

Grim Advocate of Death

To the Editor:—In the Department of Medical Economics, in The Journal, October 8, page 1313, is an article written in reply to Senator Webster Grim, whose statements were published in the *North American* concerning the Pennsylvania Board of Health. That a board of health, that medical research, that proper hygiene and sanitary work was very important to any state, all this was admitted by Senator Grim, but the expensive scale and the manner in which Pennsylvania was conducting the said work is what Senator Grim denounced. I desire to ask the writer of the above article in The Journal of the A. M. A. what amount of money he is now receiving either directly or indirectly from the Pennsylvania Board of Health.

J. M. Johnston, M.D., Huntingdon, Pa.

[Comment:—We fear that our correspondent did not carefully read the article referred to, or he would have seen that the entire article, with the exception of the introductory paragraph, was quoted from an editorial in the Philadelphia *North American*. As to how much the writer of the article receives from the Pennsylvania Board of Health, we suggest that the question be referred to the editor of the *North American*.—Ed.]

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETAILS OF THE WASSERMANN REACTION

To the Editor:—Please give an explanation of the Wassermann reaction and the reason for the different steps.

D. I. W., Cincinnati.

Answer.—The Wassermann reaction rests on the phenomenon known as fixation of complement. The name "complement" has been given to a substance found in all animal serums. This substance is necessary for the action of the lytic antibodies which are formed in the blood by reaction against various pathogenic agents or antigens. An antigen is any substance capable of provoking the formation of an antibody. It is believed that complement combines with the antibody and the latter with the antigen, making the reaction of lysis possible. Thus a hemolytic substance in the presence of complement attacks and dissolves red blood cells, setting free hemoglobin and rendering transparent an opaque suspension of red blood cells by laking the blood. If no complement is present the hemolytic antibody will have no effect on the red cells and no apparent change in the blood mixture will take place. Complement is destroyed by heating and may thus be removed from serum containing it.

Bordet and Gengou showed that the union of the antibody with the antigen (infectious virus) removed complement from the serum. Wassermann applied this discovery to the diagnosis of syphilis on the following assumption: If syphilis is active the serum of the patient must contain antibodies and if syphilitic virus or antigen is added to such serum it will combine with these antibodies and with complement and remove the complement from the serum. Later investigations showed that the antigen need not be a specific syphilitic product, although such an antigen is best for use. To test whether complement has been combined, Wassermann employs a hemolytic system consisting of the serum of a rabbit which has been injected with sheep's red blood corpuscles until an antibody has been formed in the animal's serum which is hemolytic against sheep's red blood corpuscles. If the serum of such a rabbit be mixed with sheep's red blood cells the hemolytic agent in the serum, with the aid of the complement in the serum, will destroy the red blood cells and liberate hemoglobin. But if such a serum be heated before it is mixed with red blood corpuscles complement will be destroyed and the serum will no longer be able of itself to cause hemolysis. Such serum is said to be inactivated, because it can no longer act after complement is destroyed. If, to an inactivated hemolytic serum, a serum containing free complement be added, the mixture again becomes capable of causing hemolysis and by this means it becomes possible to determine whether a serum under investigation contains free complenient or not.

In order to make a Wassermann test it is necessary first to put together a syphilitic antigen, a serum suspected of containing syphilitic antibodies, and a small amount of guinea-pig serum to furnish the complement. This mixture is incubated for a certain period (45 minutes) at 37 degrees C. At the end of this time if there are syphilitic antibodies in the suspected serum they will have combined with the antigen and with the complement so that there will no longer be any free complement in the serum. If this serum is now added to a mixture of sheep's blood corpuscles and inactivated hemolytic serum, no hemolysis will take place because complement has been removed. On the other hand, if the suspected serum contained no syphilitic antibodies no combination with the antigen will have occurred and complement will remain free, so that when sheep's corpuscles and hemolytic serum are added, the free complement will cause hemolysis.

A positive Wassermann reaction causes no change in the mixture of blood corpuscles and inactivated hemolytic serum, but in case of a negative reaction hemolysis occurs and the mixture of blood corpuscles and inactivated hemolytic serum becomes transparent and red from the liberated hemoglobin.

For the performance of the reaction the following are needed:

1. The syphilitic antigen obtained from syphilitic liver or extract obtained from the heart of the guinea-pig. These can be obtained ready prepared from certain laboratories. If made by a physician the organ should be ground with sand and warmed in a water bath at 60 degrees C. for an hour with 50 c.c. of 95 per cent. alcohol for each gram of the organ and filtered.

2. Guinea-pig serum to serve as a source of complement.

3. Hemolytic serum. Inject a 5 per cent. mixture of washed sheep's blood corpuscles into a rabbit every week or 10 days for 4 or 5 times. A week or 10 days after the last injection the blood may be removed from the heart, the serum collected, inactivated by heating at 56 degrees C. for half an hour, and kept on ice ready for use. This is also known as an amboceptor. It contains amboceptor (lytic antibody) but no complement.

4. Sheep's blood obtained from the jugular vein of a sheep in a sterile flask and defibrinated by glass pearls. It is washed with salt solution 2 or 3 times and then mixed with salt solution either in the proportion of 5 per cent. or 50 per cent., according as one adheres to the cubic centimeter plan or drop method for measuring quantities.

The blood serum of the patient to be tested is obtained as follows: Collect blood from the vein or finger, allow it to clot; remove the separated serum; centrifugate to clearness; pipette off into test tube and inactivate at 56 degrees C. for one-half hour.

Before the actual performance of a reaction it is necessary: (1) to standardize the amboceptor; (2) to see that extract alone does not bind complement or hemolyze sheep's corpuscles; (3) to see that the blood corpuscles have not hemolyzed; (4) to see that the complement is active.

The performance of the test is as follows: For each serum two small test tubes are required and several tubes for controls of the materials as above, these being repetitions of the tests of material made before beginning the test. Add 10 drops of salt solution to each tube. Add a drop of serum to each of the 2 tubes used for a given serum. Then add 2 drops of organ extract to one of them. To one of the control tubes add 2 drops of organ extract. To each add a drop of complement. Shake tubes and place in incubator for one hour. Remove and add to each a drop of standardized amboceptor and one drop of 50 per cent. suspension of sheep's

blood corpuscles. Incubate for an hour and a half and then read the result. All controls with serums alone, with normal serums and with organ extract alone should be hemolyzed. If hemolysis has occurred in tubes containing suspected serums and organ extract, they are regarded as negative. If hemolysis has not occurred at all, or only incompletely, the result indicates that the patient furnishing the serum is affected with syphilis.

A list of articles on this subject was published in THE JOURNAL, April 9, 1910, p. 1226.

HOUSEHOLD APPARATUS FOR DISTILLING WATER

To the Editor:—I desire information concerning apparatus for distilling water which may be used in the household.

1. Which is the best type of apparatus?
2. What general principles should such apparatus have?
3. Is distilled water used in the navy and on steamship lines?
4. Are there any serious disadvantages in the use of distilled water for drinking purposes?

CLEVELAND FERRIS, New York.

ANSWER:—1 and 2. Small stills for this purpose can be obtained of chemical supply houses and are usually constructed so as to conduct steam from the tea-kettle or other vessel into a worm surrounded by cold water by which the steam is condensed. Lead pipes and vessels should be carefully avoided. The tubing through which the steam passes should preferably be of pure tin.

3. We understand that distilled water is used in the navy and on some sea-going steamers, but not on steamers plying the Great Lakes.

4. It has been asserted that distilled water is injurious on account of its osmotic properties. Animal cells are unfavorably affected by it and it is supposed that the effect on the mucous membrane of the stomach may be unfavorable. As a matter of fact, however, distilled water is seldom taken into the stomach without the presence of solids, which increase its molecular concentration, and experiment has shown that when distilled water is taken into the empty stomach, solids are secreted from the blood so as to approximate the molecular concentration to that of the blood. Its moderate use, therefore, probably does no harm. The principal sanitary advantage of distilled water can be more economically obtained by simply boiling and filtering.

EXAMINATION OF WATER FOR COLON BACILLI

To the Editor:—Please answer the following questions:

1. In the examination of water for colon bacilli what is the ratio between the total number of bacteria and the number of *B. coli?*
2. Does the increase or decrease in number of fish influence the total number of bacteria? I refer to our lake fish.
3. (*a*) Is there any fish bacillus known which closely resembles the colon bacillus? (*b*) If so, how are they distinguished?
4. Can you refer me to any literature on the subjects of Questions 1 and 2?

F. W. LINN, M.D., Cleveland.

ANSWER:—1. In sewage, roughly speaking, about one-tenth of the colonies which develop on ordinary media belong to the colon group. In a relatively pure or uncontaminated surface water there may be only one colon germ to one hundred or even one thousand of other kinds. There is never any constancy of ratio.

2. No such effect has ever been traced. Migrations from polluted to unpolluted waters may possibly explain the occasional presence of *B. coli* in certain waters, since fish living in sewage-contaminated streams have been found to contain *B. coli* in the intestinal contents.

3. No. As stated above, typical *B. coli* have been found in fish inhabiting sewage-contaminated waters.

4. Consult Amyot: "Is the Colon Bacillus a Normal Inhabitant of the Intestines of Fishes?" *Transactions of the American Public Health Association*, 1901, xxvii, 400.

ACUTE INDIGESTION AND SUDDEN DEATH

A correspondent who notes the reference in this department on the above subject, August 20, 1910, calls attention to an article by Dr. Douglas H. Stewart of New York, in the *American Journal of Obstetrics*, vol. lix, No. 3, 1909. The subject of the article is "The Protection of the Accoucheur and His Patient," and the above subject is taken up in the last paragraph. Dr. Stewart believes that acute dilatation of the stomach is responsible for sudden death in pregnant women and states that he has seen two sudden deaths which he cannot attribute to anything else. He further says:

"Theoretically, in a pregnant woman the sudden expansion of the stomach between an immovable uterus and a partly movable heart may be imagined. I am now washing out all painful stomachs and carry a stomach-tube as part of my armamentarium for use at the first symptom of cardioventral disturbance. After an interval of quite characteristic pressure symptoms, varying from one to three hours, the tympanites becomes very marked, the patient gasps and gives up her life. If the patient has not been stripped and the abdomen examined, the accoucheur may be mortified and regretful. The whole matter may be summed up thus: If a pregnant woman has a dilated stomach with tension, pass the stomach-tube too early, for when the pressure effects show on the pulse at the wrist it will be too late. Never leave a tympanitic abdomen until the stomach-tube has been passed and there is a certainty that the stomach is not distended, for when death does occur it takes place with speed and without warning other than the symptoms of a 'little indigestion.'"

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 8, 1910:

Graham, George D., D.S., Sept. 15, reported for duty at Ft. Shafter, H. T.

Brown, Polk D., M.R.C., Sept. 28, left Ft. Sam Houston, Texas, en route to Ft. Logan H. Roots, Ark., for temporary duty.

Frick, Euclid B., lt.-col., will take charge of the office of the medical superintendent, Army Transport service, during the absence of Col. H. S. T. Harris, at Camp Atascadero.

Wells, F. M., R.C., granted leave of absence for two months, to take effect about Nov. 15.

Gapen, Nelson, capt., ordered to report on Oct. 15, 1910, to the commanding officer, Army and Navy General Hospital, Hot Springs, Ark., for duty.

Hanson, Louis H., capt., ordered to Ft. Hamilton, N. Y., for duty, on being relieved by Captain Gapen.

Ford, Joseph H., major, relieved from duty at Ft. Riley, Kan., and ordered to Ft. Wadsworth, N. Y.

Richards, Robert L., capt., granted leave of absence for four months, with permission to go beyond the sea, effective about Oct. 3, 1910.

Brown, Polk D., R.C., ordered to Ft. Logan H. Roots, Ark., for duty during the absence on leave of Major Robert N. Winn, medical corps, which takes effect about Oct. 1, 1910.

Sherwood, John W., R.C., will proceed to Ft. Strong, Mass., for temporary duty.

Davis, William B., col., granted leave of absence for two months, with permission to visit China and Japan.

Medical Corps, U. S. Navy

Changes for the week ended October 8, 1910:

Kennedy, J. T., surgeon, detached from the *Indiana* and ordered to the *Louisiana*.

Ohnesorg, K., surgeon, detached from the *Louisiana* and ordered to the *Virginia*.

Dennis, J. B., surgeon, detached from the *Virginia* and ordered to the navy yard, Philadelphia.

Gates, M. F., surgeon, detached from the navy yard, Philadelphia, and ordered to command the *Solace*.

Pickrell, G., surgeon, detached from command of the *Solace* and ordered home to await orders.

Lawrence, H. F., asst.-surgeon, ordered to Washington, D. C., for examination for promotion and then to wait orders.

Casto, D. H., P. A. surgeon, commissioned passed asst.-surgeon from July 12, 1910.

Hightower, C. T., acting asst.-surgeon, resignation accepted, to take effect Oct. 1, 1910.

Pratt, R. B., acting asst.-surgeon, detached from instruction at the Naval Medical School, Washington, D. C., and ordered to the marine recruiting station, Philadelphia.

Huff, E. P., asst.-surgeon, detached from the *New York* and ordered to the Naval Hospital, Canacao, P. I.

Hart, S. D., asst.-surgeon, detached from the *Albany* and ordered to the naval station, Olongapo, P. I.

Wickes, G. L., P. A. surgeon, ordered to the *New York*.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Oct. 5, 1910.

Banks, Charles E., surgeon, directed to assume temporary charge at Portland (Quarantine), Maine, during the absence of Surgeon J. M. Eager.

Eager, J. M., surgeon, directed to proceed to Naples, Italy, on special temporary duty.

Nydegger, J. A., surgeon, detailed to represent the service at the meeting of the Medical Society of the State of Pennsylvania to be held in Pittsburg Oct. 4-6, 1910.

Lavinder, C. H., P. A. surgeon, granted 7 days' leave of absence from Oct. 1, 1910.

Grubbs, S. B., P. A. surgeon, granted 14 days' leave of absence from Sept. 25, 1910, on account of sickness.

McClintic, T. B., P. A. surgeon, granted 7 days' leave of absence from Sept. 28, 1910, under paragraph 191, Service Regulations.

Rucker, W. C., P. A. surgeon, directed to proceed to Elizabeth, N. J., on sepecial temporary duty. Leave of absence for 10 days from Sept. 14, 1910, amended to read 7 days from Sept. 15, 1910.

Porter, Joseph Y., quarantine inspector, leave of absence for 30 days from Sept. 20, 1910, revoked.

Bean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from Oct. 1, 1910.

Gustetter, A. L., acting asst.-surgeon, granted 6 days' leave of absence from Oct. 1, 1910.

Hallett, E. B., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 1, 1910.

McDaniel, S. E., acting asst.-surgeon, granted 14 days' leave of absence from Oct. 18, 1910.

McLarty, A. A., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 3, 1910.

Small, E. M., acting asst.-surgeon, granted 8 days' leave of absence from Oct. 3, 1910.

Tappan, J. W., acting asst.-surgeon, granted 20 days' leave of absence from Oct. 1, 1910.

Townsend, F., acting asst.-surgeon, granted 4 days' leave of absence from Oct. 6, 1910.

Wetmore, W. O., acting asst.-surgeon, granted 1 day's leave Sept. 19, 1910, under paragraph 210, Service Regulations.

Board of Medical Officers convened to meet at Stapleton, N. Y., Oct. 7, 1910, for the purpose of making a physical examination of a cadet of the United States Revenue Cutter Service. Detailed for the Board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. A. Korn, recorder.

Society Proceedings

COMING MEETINGS

Am. Assn. for Study and Prev. Infant Mort., Baltimore, Nov. 9-11.
American Association of Railway Surgeons, Chicago, October 19-21.
Hawaiian Territorial Med. Assn., Honolulu, November 26-28.
Ohio Valley Med. Assn., Evansville, Ind., Nov. 9-10.
Southern Medical Assn., Nashville, November 8-10.
Virginia, Medical Society of, Norfolk, October 25-28.

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-fifth Annual Meeting, held at Lexington, Sept. 27-29, 1910

(Continued from page 1309)

Officers Elected

The following officers were elected for the ensuing year: president, Dr. James G. Carpenter, Stanford; first vice-president, Dr. Joseph W. Pryor, Lexington; second vice-president, Dr. Byron E. Gianinni, Coalmont; third vice-president, Dr. David O. Hancock, Henderson; orator in medicine, Dr. William W. Anderson, Newport; orator in surgery, Dr. John R. Wathen, Louisville; delegates to the American Medical Association, Dr. Curran Pope, Louisville; Dr. William W. Richmond, Clinton, and Dr. Arthur T. McCormack, Bowling Green.

Paducah was selected as the place for holding the next annual meeting.

President's Address: Preventive Medicine

DR. J. E. WELLS, Cynthiana: Not all we have aimed at in public health problems has been accomplished, but our hopes have been realized in regard to medical education, and a higher degree of qualification is now required of those who are to become members of the medical profession. Medical societies have been doing work which has evidently been appreciated, as in the Kentucky State Medical Association the increase in membership since 1903 has been from 290 to 2,000. In view of all that has been accomplished in the method of prevention and treatment of such scourges as cholera and yellow fever, typhus and typhoid, scarlatina, diphtheria and epidemic meningitis, it needs little argument to prove the value of quarantine and of efficient medical inspection and protection. The conscientious physician of the present day is devoting his life not only to treating individuals who are already ill, but to combating epidemics. He does this by educating parents and children as to the prevention and spread of disease, and by impressing on them the need of clean and sanitary surroundings. In addition, he preaches the importance of pure food laws, the protection of the water supply, the extermination of parasites and disease germs, the protection of the sex relations, the future legislation of marriage and the crying need of a valiant fight against tuberculosis and other virulent and infectious diseases that are abroad in our land.

The public school should become the object of the physician's solicitude. Hygiene should be taught and a local physician elected as a member of the school boards, whose advice should be sought. Each county should have a paid medical inspector. The aim of modern education should be to foster the physical as well as the intellectual and moral development of the child. A good system of inspection and instruction would soon elevate the standard of our future citizens, as well as promote health and happiness. One of the most important things within the scope of the doctor's work is the part he can take in medical legislation. Three important bills became laws at the last session of the state legislature: the bill to appropriate $30,000 to maintain the State Board of Health, and the criminal abortion and the vital statistics bills.

We are proud of all that has been done, yet when we contrast this with what we wish to do, it creates a feeling of sadness among us. The spread of tuberculosis could be easily averted if state and county sanatoriums were established, and free dispensaries were maintained in smaller cities. The law against expectoration in public places should be made more stringent; laymen should be taught the dangers lurking in the public drinking cup and the communion cup; women should be urged to discontinue promiscuous kissing as a greeting, and the kissing of babies should be discouraged. The prevention of marriage between diseased and mentally deranged persons is not impracticable. The time may come when candidates for matrimony will have to produce certificates from physicians stating that they are free from all diseases and fit to perpetuate the race. The sex problem is perhaps the most far-reaching one of the age, and it lies with the physician to aid in solving it, as it is only to him such matters are confided. The world's idea of greatness has changed and it will change more. The great warriors who wore the laurel wreath because they had slain their thousands will not be comparable in greatness with the noble men of science who have laid down their lives for the advancement of the cause they loved.

Kentucky's Opportunity for Vital Statistics—How the Medical Profession Can Aid

DR. CRESSY L. WILBUR, Washington, D. C.: The value of the entire body of statistics collected by the state will depend on their completeness. Ninety physicians out of a hundred may comply with the law, and yet the total results for the entire state may be vitiated by the other ten who refuse or neglect to do so. If one leading physician in a community refuses to take the trouble to register his births, he will soon have imitators, who, very reasonably, will fail to see why there should be any discrimination of persons under the general statute; and in a short time, the whole registration law will become a farce. The remedy for such a condition is the prompt enforcement of the law, in all cases of known violation, and utterly irrespective of the social or professional prominence of the violators. Remember, such a violator of the act is overriding the law of the commonwealth for his personal convenience, impeaching the reputation of the profession for faithful observance of the legislation that it has itself urged, and, perhaps, working an irreparable wrong on the future of a helpless infant, from whose family he has taken money for discharging his proper professional service, which includes the registration of the birth. If any leniency is to be shown in such cases, it should be exhibited toward midwives, whose ignorance may account for neglect, and not toward enlightened physicians, whose knowledge of the scientific and sanitary uses of complete birth registration should render them less excusable for failure to comply with the provisions of a reasonable registration law. Nevertheless, the almost total lack of complete birth registration in the United States is due to the failure and neglect of physicians to observe such laws, and of other physicians, in the executive capacity of health officers, to enforce them. It is frequently true that midwives are much more particular about registering births than physicians. The remedy for this condition lies in the hands of physicians, and, starting out with a new organic law, it should be easy, through state and county organizations, to hold up the hands of the local registrars and of the state registrar in securing such a thorough compliance with the law for the registration of births, that the reproach now resting on the profession in this respect will be removed. It should not be said that physicians prescribe registration laws for others and refuse to obey them themselves. It should be considered professional misconduct to violate such statutes, and the county societies should take pride in scrupulous observance, by their members, of these necessary requirements.

DISCUSSION

DR. W. L. HEIZER, New Haven: It is unfortunate that at present we have no term that would include the sum total of the loss by death, or the loss by sickness, and the mental suffering entailed by diseases that are preventable and that are not prevented. The striking feature of Dr. Wilbur's paper is that only 53 per cent. of the area of the United States is a registration area. In the last analysis it is unquestionably proved that the preservation and perpetuation of human life is the most important factor to be considered. This is true, whether we consider it from the personal, social, state or national standpoint.

DR. W. W. RICHMOND, Clinton: The importance of vital statistics has never been fully appreciated by the average physician. It has been generally regarded a matter of curiosity and satisfaction, belonging chiefly to the statistician as a record for reference, with no direct personal benefit to the public. The prevention of disease and premature death depends largely on the successful operation of a law of vital statistics. A recognized nomenclature is very important, little less than necessary in the operation of the law, and thanks to the American Medical Association, which has brought so many blessings, the great need will doubtless be supplied.

DR. WALTER BYRNE, Russellville: That Kentucky has been one of the first Southern states to enact laws, to gather and compile such valuable assets, is very gratifying, and the enforcement of these laws bearing on vital statistics should be the duty of each and every physician in the state.

The Necessity for Properly Selected and Compensated City and County Health Officers

DR. J. N. MCCORMACK, Bowling Green: As previous legislation had made the other health machinery almost perfect, on paper at least, the possibilities for practical life-saving work in every county and community are limited only by the extent to which the local fiscal authorities and people will co-operate in it. It should be known, however, that even with this advanced legislation and liberality there is little promise in this field in any county which does not have a well-trained health officer who can devote his entire time to the duties of his office. In order to make it easier to bring this about, and in the interest of both efficiency and economy, it is suggested that, except in cities of the first class, systematic efforts be made to combine the city and county health offices, so that both may be held by the same person. It should not be a political office, and the tenure should depend on the betterment of sanitary conditions, as shown by a steady decrease in the sick-rate and death-rate. As no one can be a health officer of the kind for which I am pleading and practice medicine, the salary should be such as is given to circuit judges and other officials in whom a high order of capacity and unceasing devotion to duty are required. In fact, it would be just as reasonable to expect judges to support themselves by the practice of law while serving on the bench, as to expect health officers to do their far more important and exacting work, requiring the highest order of training and judgment, and to practice medicine at the same time. Let us no longer deceive ourselves, or permit the people to be deceived, about a matter so vital to them. Until we can have a health officer in each county and city so selected and supported that he can afford to qualify himself fully for it, and make the prevention of sickness his life work, most of what this board and the medical profession stand for is but an idle dream in that jurisdiction. It should be known, too, that all this is even more important to country people and to those of small towns than to the residents of cities. Necessity forces the latter to some observances of the laws of health and, in consequence, the preventable sick-rate and death-rate is much lower with them than with the farmers, who ought to be the healthiest people in the world.

DISCUSSION

DR. JOSEPH M. MATHEWS, Louisville: Dr. McCormack pleads for a well-trained health officer in each county, who can devote his entire time to the duties of his office. There is but one way to bring about this ideal state of affairs, namely, select the proper man, let him become educated in health affairs, and then compensate him for his labor.

DR. J. G. CARPENTER, Stanford: The health officer should be paid for his services, and the ignorance of the public is the reason that these officers have not been paid in the past. The people do not understand the great financial problems that are confronting them. They do not understand the great taxation we are subjected to from time to time; hence it is necessary to educate them in regard to the efficiency of boards of health and what can be accomplished by them.

DR. W. W. ANDERSON, Newport: As a united profession, let us make it unpleasant for the health officer who is a petty politician, who procures and holds on to his job on this account, and then we shall be able to get men who are sanitarians; or let us make sanitarians out of men we have.

DR. B. W. SMOCK, Louisville: No health officer can do good service and attend to a general practice any more than a physician can divide his time between the practice of medicine and the duties of a minister of the gospel. I have learned one very important fact from experience, and that is that a man is paid according to his ability for the work performed and the results obtained. The services of a good health officer are more valuable to the people than those of the circuit judge.

The Nature and Treatment of Splenic Anemia

DR. B. E. GIANNINI, Coalmont: The employment of drugs for the permanent or temporary relief of splenic anemia cannot be said to have been such as to inspire confidence in our ability to cope with the affection by that class of weapons. Still one reliable author (Taylor) has obtained temporary relief in the simultaneous administration of arsenic, potassium iodid and oxygen gas to the amount of 30 liters daily. The conservative physician will always follow paths that others have found to lead to desirable ends, and I hold that patients treated medically should be given potassium iodid and arsenic, while the inhalations of oxygen should be persevered in. Fowler's solution should be given in doses of 7 minims after meals, while potassium iodid is to be taken in doses of 5 grains in solution an hour before meals. I have great faith in the action of oxygen inhalations, and the patient should, in all cases, receive 30 liters daily.

DISCUSSION

DR. S. R. YORK, Center: I have seen only one case of splenic anemia. The patient was a colored man, aged 65, well developed, weighing about 180 pounds, and living in a malarial district in Tennessee. His previous health had been good. He complained of weakness, and of a large tender spleen. I thought that he had chronic malaria, and put him on quinin, iron and arsenic, but his disease went on, until I thought there was some malignancy about the case. At last he had purpuric spots and hemorrhages from the gums and stomach, when a true diagnosis was made, as we thought; death occurred in about two months after the appearance of the hemorrhages.

DR. J. T. MCCLYMONDS, Lexington: I have seen two cases in the last ten years in Lexington. One patient, sent to me with a diagnosis of ulcer of the stomach, had had six hemorrhages, none being under 800 c.c. A diagnosis was not made. None of the symptoms of ulcer of the stomach was present, but an exploratory incision showed the entire mucus membrane of the stomach covered with small hemorrhagic points. The spleen was about one-third larger than normal. It showed a good deal of scarring and many adhesions. These adhesions were broken up; but a diagnosis was not made until two days after the operation, and it was hoped that starting up collateral circulation would have some effect on the disease. The patient died in a month following the operation.

DR. FRANK BILLINGS, Chicago: There are reports of cases on record in which the patients suffered from all the typical signs of splenic anemia, and in which thrombophlebitis, either of the splenic or portal vein, was the primary lesion. This was first written about by Dr. George Dock and by Dr. Warthin. Splenomegaly of the primary form, or splenic anemia, has no distinctive blood picture, except that there is a smaller percentage of hemoglobin than of the red cells. Usually, unless there is some infective process going on at the

same time, the white cells are small in number, and not large. There is a tendency in many patients to pigmentation of the skin, and at the same time these patients are apt to have other points or areas of the skin in which the pigment disappears. I have had several patients showing that feature. Hemorrhage from the stomach is due, in all probability, to the congestion of the splenic vein.

(To be continued)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-third Annual Meeting, held at Syracuse, N. Y., Sept. 20-22, 1910

(Concluded from page 1313)

Puerperal Wound Intoxication and Wound Infection; A Historical and Critical Review of Childbed Fever

DR. HENRY SCHWARZ, St. Louis: Isolated cases of puerperal fever have occurred at all times among civilized nations, but the epidemics of this disease appeared with the advent of lying-in hospitals and they became more dreadful when frequent necropsies were made in search of the cause. Oliver Wendell Holmes, in 1843, pointed out the contagiousness of puerperal fever and the means for preventing it. Semmelweis, in 1847, insisted on the same points, and demonstrated the correctness of his views by reducing the mortality from childbed fever in his Vienna clinic.

The medical profession of the United States has almost forgotten that Holmes has equal, if not greater claim, to be remembered as the discoverer of the nature of puerperal fever. Most text-books do not mention him, while they do justice to Semmelweis; the one pleasing exception is that of Barton Cooke Hirst.

At present the medical profession is fully acquainted with the nature of puerperal infection and with the means which will absolutely prevent it. In well-managed institutions, infection has been driven out, but nevertheless thousands of young mothers die yearly in the United States whose lives could be saved. The cause lies partly in the inadequate obstetrical training which the medical schools until recently provided; this cause, however, is now rapidly disappearing.

The principal cause lies in the fact that throughout the United States in the large cities the greater part of the obstetrical work is done by midwives, and that, with few exceptions, no laws exist regulating the practice of midwives. Such laws should be enacted and the schools for midwives should be under control of state boards. In Missouri, Louisiana, Ohio, Wyoming, Utah and the Philippine Islands, the laws provide for examination and registration, but not for control of these schools. Maine and Mississippi especially declare that their medical practice acts do not apply to midwives; the law of Mississippi says: "Females engaged in the practice of midwifery are not prohibited from such practice, but are entitled to engage therein without a license."

Serotherapy and Bacterial Vaccines in Puerperal Septicemia

DR. HENRY SCHWARZ, St. Louis: Since 1895, I have used the various antistreptococcus serums in cases of severe acute puerperal sepsis, which seemed hopeless under other forms of treatment. In the first case, in 1896, one of severe pyemia, the patient recovered; no bacteriologic diagnosis had been made. In all other cases cultures made from the blood proved the presence of streptococci; every patient died. When bacterial vaccines were recommended in acute infections, I not only considered such treatment hopeless and illogical, but feared that it would injure the reputation of vaccines in their legitimate field. In acute streptococcus infections billions of streptococci are found in the blood; they die by millions and their bodies are dissolved, liberating thereby the endotoxin. The formation of antibodies under such conditions is very feeble or at a standstill; to inject millions more of dead germs, with their endotoxins, shows as much sense as the injection of morphin into a patient dying with morphin poisoning. To prove my contentions, I caused to be undertaken a series of experiments on rabbits, which prove the following points:

1. Vaccination after inoculation has no influence on the infection; all animals died in three days, the same as the control animal.
2. Vaccination simultaneously with inoculation has no influence on the infection; all animals died in three days, the same as the control animal.
3. Prophylactic vaccination produces immunity, but it must extend over a considerable period and vaccination must be stopped ten days before inoculation.

Intraperitoneal and intravenous vaccination prolonged the duration of the infection, so that animals so vaccinated died two days later than the control animal. Subcutaneous vaccination alone is effective and animals vaccinated every four days, from July 24 to August 28, and inoculated September 7, remained well, while the control animal died in three days. Excessive vaccination (from 50 to 200,000,000 in average weight animals) produced no ill-effect beyond a temporary refusal of food. The experiments are being continued.

Eight Cases of Acute Hemorrhagic Pancreatitis

DR. JOHN W. KEEFE, Providence, R. I.: These cases are of interest from several standpoints. Two patients recovered, 2 were operated on twice, 1 was operated on for acute hemorrhagic pancreatitis and 1, one-half year later, was again operated on and 4 gall-stones removed from the gall-bladder. Dr. Gile of New Hampshire reports a similar case. He operated for acute hemorrhagic pancreatitis and his patient was operated on about one year later by Dr. Irish and a number of gall-stones were removed. Another patient in this series was operated on for acute hemorrhagic pancreatitis and some months later a pancreatic cyst was removed. The events were reversed in one of the cases: 32 gall-stones were removed, but a stone was left in the common duct. Some months later the patient died from acute hemorrhagic pancreatitis. We should keep in mind the close relationship between infection of the bile passages and disease of the pancreas. While we should strive to make more accurate diagnoses in lesions of the upper abdomen, in obscure conditions, we should not delay but should operate early, as most of the conditions that simulate pancreatic disease require surgical interference.

Two Cases of Perforated Gastric Ulcer Causing Peritonitis

DR. T. B. NOBLE, Indianapolis: The pathology and symptomatology are analogous to perforation of any hollow viscus of the abdomen. The diagnosis must depend on the recognition of a demonstrable peritoneal insult, as evidenced by sudden, severe pain about the umbilicus or epigastrium, with local tenderness, followed by vomiting and the general symptoms of shock. Careful inquiry reveals a period of gastric disorder antecedent to the acute attack. Symptoms of acute peritonitis, more or less general in character, rapidly ensue, and it may be that they will overshadow all others at the time of observation, as happened in his first case. The vomiting of general peritonitis due to other causes has been continuous in my experience. But in these cases it occurred only once, and that very early at the time of perforation. It was not present in either case during the progress of the peritoneal inflammation.

Public and Private Hospitals

DR. JOSEPH PRICE, Philadelphia: Hospitals are extremely important in the education of young physicians and nurses, and in the clinical instruction of practitioners. The private hospital is largely responsible for the important specialties, and I value it most highly for the good work it has done along special lines. In the great medical educational centers—New York, Boston, Baltimore, Philadelphia, Chicago and New Orleans—the specialties should be advanced. If it is necessary for any one to have his wife or child operated on, the best is bad enough in the most refined specialty that we have. We should aim at that refinement of knowledge and skill that obtains in the treatment of diseases of the eye or in other special lines of work.

Cesarean Section

DR. J. H. CARSTENS, Detroit: Mrs. M., aged 40, mother of three children, widow for 10 years, married again one year

ago; she grew very fleshy. She became pregnant and toward the end it was found that the uterus was in a hernial sac and the abdomen pendulous, hanging down to the knee. On vaginal examination the uterus could not be felt. It was pulled up. Cesarean section was resorted to and followed by a smooth recovery.

High Operation vs. Cesarean Section

DR. WILLIAM H. HUMISTON, Cleveland: I believe that Cesarean section should be substituted for the high-forceps operation, which is attended with a mortality to the mother of 10 per cent. and to the child of nearly 21 per cent. The technic employed in the modern Cesarean operation has been so perfected, and the indications for the operation so widened that it is now frequently resorted to in order to give both mother and child greater chances for life. The rapidity with which this operation can be safely performed by an experienced abdominal surgeon is an important factor. Modern aseptic technic and favorable surroundings are essential and will insure practically a *nil* mortality, provided the mother has not already been infected by repeated examinations and efforts to deliver. In all cases in and near a city or town in which hospital accommodations are modern, the patient should be transported to such an institution for operation and convalescence. Many practitioners throughout the United States resort to the use of forceps needlessly, and are not impressed with the fact that the high-forceps operation is a major one, that it requires the hand of an expert obstetrician and a trained mind to avoid serious if not fatal injury to the mother and the sacrifice of the life of the child. Many physicians resort to the high-forceps delivery who would not think of undertaking a Cesarean section. If a physician did, and his technic was as careless as in the high-forceps operation, his mortality would be appalling. The general practitioner should not resort to the high-forceps operation without consultation with and the aid of an expert obstetrician.

Cesarean Section by the Small Median Incision Above the Umbilicus

DR. A. B. DAVIS, New York: Of the 78 Cesarean sections performed by me, the first 3 were done in tenements; the uterus was removed. Since Aug. 12, 1903, I have done the operation 75 times, and in no instance has the uterus been removed from the abdomen. Beginning with Case 4, a much smaller incision was used, half above and half below, and to the left of the umbilicus. In the 7 cases following this one, I gradually made the incision smaller and carried it higher up; until, Nov. 20, 1904, I, so far as I know, first independently conceived and practiced the small, high median incision, entirely above the umbilicus, in a woman, the twelfth in my series, being the second Cesarean section on this woman, the same as in Case 4. More than 2 years after this date the following allusion to the high incision was brought to my attention in Blundell's Midwifery, published in 1842. He says:

> Some might think, perhaps, that in removing the fetus by the Cesarean incision we ought to make the opening above the navel instead of below. To this opinion, however, I can by no means accede; for if we make the incision above the navel the intestines will protrude more copiously, the region of the placenta will most probably be divided and on the abstraction of the ovum the uterus collapsing into the pelvis will sink below our reach, disappearing beneath the intestines, which fall over it. Place the incision, therefore, below the navel; by this collocation you will avoid these impediments.

Except in very recent writings, this is the only mention of the high incision above the umbilicus known to me. There is no reason why this operation should be singled out from all others as one which must be performed in great haste. It should be done with the deliberation called for in any other abdominal operation. There is great danger in doing otherwise. Several times I have found the intestines in front of the uterus; once it was injured. The incision should be long enough to allow easy delivery of the child, but the abdominal wall at this point in the full-term woman is thin and stretches easily. The small, high incision does not allow easy exposure or escape of the abdominal contents. Not infrequently all that we see is the uterus and a small portion of omentum. This wound is away from the site of greatest strain on the abdominal wall, at a point reinforced by the recti muscles as they approach each other toward their upper attachments. It is small. I have never seen hernia following it. The liability to adhesion between the abdominal wound and the uterine wound is greatly diminished.

Secondary Repair of Complete Perineal Lacerations; Technic and Results

DR. E. J. ILL, Newark, N. J.: There are still many failures resulting from repair of complete laceration of the perineum. My first operation after the method to be detailed was done Feb. 1, 1891. The patient in a doubtful case of improvement had perfect retention power within a few months. Altogether, 56 cases showed remarkable and uniform success; 26 were complicated by other operations. In my operations I followed the principle laid down by Sanger as the Tait operation in 1887. The operation is essentially a flap-splitting operation, and can be divided into six distinct steps: (1) the incision; (2) the flap splitting; (3) suture of the rectum; (4) suture of the perineum; (5) suture of the vagina; (6) twisting of perineal sutures. Careful attention should be given to the bowels, and the diet should be free from residue as possible. Thorough aseptic conditions before, during and after operation should be had. I operate under constant irrigation. The finger should touch neither the wounded tissue nor the rectum; all handling of tissue should be done by sterile instruments. Incisions are H-shaped, beginning at a point just outside of the orifice of Bartholin's gland, extending downward and backward, just outside of the retracted sphincter. The cross-bar of the H is carried exactly across at the mucous membrane of the rectum and vagina. Two flaps are formed, an anterior and posterior, the posterior one denuding the ends of the torn sphincter. The suture of the rectum is done with the finest catgut in the denuded tissue of the posterior flap. I prefer silver wire for the perineum. Three sutures take care of the sphincter. The fifth step consists of suturing the anterior flap of the vagina. Exactness must be exercised in coaptation of the wound when twisting down the sutures of silver wire. These sutures are cut on the ninth day. The after-treatment consists of moving the bowels in 48 hours, preceding the act of defecation by a sweet-oil injection. It is best to have the first movement with the patient on the left side, the nurse supporting the newly made perineum. Urination is usually normal. The patient should be well aware of her retention powers at the time the sutures are removed.

Intussusception in Infants

DR. HERMAN E. HAYD, Buffalo: This condition is much more common than is usually accredited, owing to ignorance and carelessness in making first examination. The diagnosis should be made early, as the symptoms and history are frank and dramatic in their onset. Too much importance is placed on the presence of a sausage-shaped tumor. Treatment is surgical and the mortality increases the longer the operation is delayed. Injections, irrigations and insufflations are too uncertain to be practical and scientific, but in recent cases they are often of value in assisting subsequent reduction after the abdomen is opened. The operation should be done quickly and no time should be lost in fruitless manipulations of the bowels. It is better generally to eviscerate at once and reduce the mass outside, than try to effect its reduction within the abdomen. Contrast the terrible mortality of appendicitis and extrauterine pregnancy of 25 years ago under medical treatment with the splendid results of to-day, due in no small measure to the work and teachings of this society, and we must not rest content until the same claim can be made for intussusception in infants.

Conservatism in Operations on the Uterine Appendages

DR. LEWIS C. MORRIS, Birmingham, Ala., read a paper on this subject, in which he drew the following conclusions:

1. No woman under 40 should have all of both ovaries removed except in the presence of tuberculosis or cancer.
2. Resection or amputation of diseased parts and plastic work on the tubes will occasionally be followed by conception.

3. Even in the presence of infection and more or less involvement of both tubes and ovaries plastic work, followed by pelvic drainage and the Fowler position, may be followed by regeneration.
4. Radical or sacrificial surgery and conservative or conservation surgery have about the same mortality but a vastly different morbidity.
5. Occasionally a secondary operation may become necessary which might have been avoided by doing radical work.

Intravenous Injection of Magnesium Sulphate in Bacteremia

DR. R. R. HUGGINS, Pittsburg, Pa.: In the study of drugs causing hyperleukocytosis, it was determined to find out, if possible, whether magnesium sulphate might act in this manner when administered intravenously. After a careful study in both rabbits and the human, it was decided that it did not produce a regular increase in the leukocytes when thus administered. During this study a number of intravenous injections were administered to human beings, and it was determined that the drug could be given intravenously without any apparent harm to the patient. Experiments show that a 1 per cent. solution in a normal saline solution will not produce hemolysis of the human blood. It will not precipitate the globulins when given in this dilution, nor have I seen any effect on the specific gravity of the urine. It was decided that 30 grains of magnesium sulphate in 8 ounces of normal saline solution could be safely administered intravenously to the average individual. It must be given slowly into the vein at a temperature of from 105 to 108 F., the time occupied in allowing this quantity to run into the vein being 20 minutes. If allowed to flow into the vein rapidly respiration becomes embarrassed and the patient complains of heat all over the body. It has been given in this manner 50 times either by me or by my assistants, and the result in many instances has been gratifying. It has been given at intervals of 24 hours for several days. It was during this study that it was determined to try the use of this drug in a patient suffering from puerperal infection. In a number of cases which were beginning a typical course, similar to that in patients who died in spite of all treatment, the patients have been treated by intravenous injections of magnesium sulphate with apparent benefit. Its use has been limited almost entirely to the treatment of puerperal infection, and the number of cases treated are too few to draw any conclusions.

Fibromyomata of the Uterus, Complicating Pregnancy, Labor and the Puerperium

DR. R. W. LOBENSTINE, New York, read a paper which was based upon a study of one hundred cases occurring at the New York Lying-In Hospital. The chief deductions from this series of cases are:

1. A myomatous condition of the uterus predisposes to sterility. Parvin states that while the average sterility is 1 in 8, it is 1 in 3 in women with myomata. Charpentier's figures correspond closely to these.
2. The tendency to abortion is increased. In the bad cases, both spontaneous and artificial abortion may prove difficult to handle by the natural channel and most dangerous to the life of the individual. In the severe cases in which it is difficult to gain access to the cavity of the uterus proper, and in the presence of real hemorrhage, laparotomy is the operation of choice.
3. The majority of the patients who do not abort early proceed through pregnancy, labor and the puerperium with few or no symptoms; therefore, operative interference is rarely indicated during pregnancy and is as a rule meddlesome midwifery. This statement is made cautiously, as in the minds of many it will be open to criticism. The operation of myomectomy during pregnancy is just now very popular, but it is rarely indicated. The results of myomectomy are none too good. Consider, for instance, the report of Carsten's 150 cases: The operations were performed before the seventh month. There were 22 abortions; 13 deaths. Occasionally it may be wise to do a myomectomy, and occasionally necessary to do hysterectomy, but as a rule conservatism should be the watchword.
4. Nature accomplishes wonders at the time of labor, overcoming any apparent dystocia, in a large percentage of cases; when delivering avoid all possible trauma to the tumor.
5. Finally, with the development of the symptoms of gangrene in a myoma, in the puerperium, operate early, to save the life of the patient.

Puerperal Eclampsia

DR. E. G. ZINKE, Cincinnati, read a paper on this subject, in which he gave a brief analysis of ninety cases of puerperal eclampsia, and a critical review of the treatment of this disease. He drew the following conclusions:

1. Not all cases of puerperal eclampsia are alike; much depends on the extent to which the kidneys and liver are involved. The so-called malignant form, as the term implies, is fatal from the beginning; the so-called benign variety ends in recovery, sometimes in spite of the treatment adopted. The variety of mean gravity is without doubt favorably influenced in its course by careful and judicious treatment.
2. The prognosis for both mother and child is much worse when the convulsions supervene during pregnancy, the maternal mortality ranging from 35 to 50 per cent., and the fetal mortality from 65 to 75 per cent. The prognosis of intrapartum convulsions is more favorable, maternal as well as fetal, and amounts to about 25 per cent. The maternal mortality of postpartum convulsions is as a rule about 7 per cent. In my experience, having had but 2 cases, it is 50 per cent.
3. The most important treatment of puerperal convulsions is prophylaxis before the appearance of symptoms as well as before the eclamptic attacks when prodromal signs exist. The patient must be protected from injury during the convulsions and the duration and frequency of the paroxysms should be controlled and abbreviated, medicinally rather than surgically. Veratrum viride in sufficiently large doses is the remedy *par excellence* to reduce the blood-pressure and the pulse frequency. Hot baths and hot packs judiciously employed, and free but not excessive catharsis, strict milk diet, and the recumbent position are of almost equal importance.
4. Chloral in large doses by rectum, if the patient is very restless during the interval of the attacks, is a good remedy. Chloroform inhalations, especially if of long duration, should be regarded as a source of great danger. The same may be said of frequent and large doses of morphin, both of these drugs having their ardent advocates.
5. Antitoxin treatment may play an important part in the future in the treatment of eclampsia.
6. Saline solution and sugar water instillations can do no harm and may do a great deal of good.
7. If, of late years, the maternal mortality of puerperal eclampsia has been reduced at all, it is the direct result of careful prophylaxis and intelligent medical care. Surgery has contributed nothing to it. The dictum, "assist in labor, but do not induce it," or "treat the convulsion and let the pregnancy take care of itself," is better than the dictum, "empty the uterus as soon as possible in every case of puerperal convulsions, no matter what the period of gestation."
8. Decapsulation of the kidneys, manual, balloon and instrumental dilatation, especially the old-time accouchement forcé, are in my opinion hardly justifiable, and should have no place in the treatment of puerperal eclampsia.
9. If, however, the symptoms are very threatening and the medical care above described fails to bring about prompt amelioration in the patient's condition, an early delivery may be desirable. If the patient be near term, but not in labor, the conservative Cesarean section should be selected. If the patient is just within the period of viability, vaginal hysterotomy is the proper procedure. If the fetus is not viable, before the end of the sixth month of gestation, deep cervical incisions will easily relieve the uterus quickly of its contents.
10. No one has a right to perform any of these three operations unless experienced and familiar with the technic of each. And in every instance the patient must have the benefit of strict asepsis. Without these requirements it is best to rely entirely on the medical care above outlined.

Pelvic Reflexes

DR. ROBERT T. MORRIS, New York: In a certain proportion of patients with pelvic reflexes, there is the neurotic habit. These patients are neurasthenics. If a surgeon takes out one ovary for the pelvic pain the patient is just as badly off as before the operation. If the other ovary is removed she is just the same. The surgeon must deal with neurotic patients with a great deal of intelligence. They represent a class calling for surgery, but the surgeon should beware of patients with pelvic pains, ovarian and tubal troubles, and neuralgic pains, particularly those of the neurotic or neurasthenic type. We have a group of disturbances proceeding from a scar of the cervix. Most women who have borne children have torn cervices. Does the cervix require operation for its repair? Do we do the right thing if we operate because we find tears and scars? No. We are not to operate in such cases unless we have definite reasons for doing so. If one should press on a scar of the cervix with the finger nail or with the sharp point of a retractor and bring out instantly that reflex, then the case is one requiring operation for reflex disturbance, but, if one should press on a scar and the patient does not know it, or if one should press on another scar and the patient does not know it we should not operate in that case for relief of reflex disturbances, no matter how much the cervix is torn. One may operate for repair of a torn cervix on general mechanical principles, but not for the purpose of relieving the efferent reflex.

Other Papers Read

The following papers were also read: "Tumors of the Bladder," by Drs. J. F. Erdmann and J. F. McCarthy, New York; "Adenocarcinoma of the Kidney," by Dr. J. G. Sherrill, Louisville; "Torsion of the Great Omentum," by Dr. W. J. Gillette, Toledo, O.; "Two Right-Sided Femoral Hernias in the Same Patient," by Dr. N. S. Scott, Cleveland, O.

State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 8-9. Sec., Dr. F. T. Murphy, Brinkley; Eclectic, Little Rock, November 8-9. Sec., Dr. G. A. Hinton, Hot Springs.

CONNECTICUT: Regular, City Hall, New Haven, November 8-9. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, November 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, November 8. Sec., Dr. Thomas S. Hodge, 19 Main St., Torrington.

FLORIDA: Palatka, November 9-10. Sec., Dr. J. D. Fernandez, Jacksonville.

ILLINOIS: Coliseum Annex, Chicago, October 19-21. Sec., Dr. James A. Egan, Springfield.

LOUISIANA: Regular, New Orleans, October 18-19. Sec., Dr. A. B. Brown, 108 Baronne Street; Homeopathic, New Orleans, November 7. Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, November 8-9. Sec., Dr. Edwin B. Harvey.

NEBRASKA: State Capitol, Lincoln, November 9-10. Sec., Dr. E. Arthur Carr, 141 S. Twelfth Street.

NEVADA: Carson City, November 7-9. Sec., Dr. S. L. Lee.

NEW JERSEY: State House, Trenton, October 18. Sec., Dr. H. G. Norton.

TEXAS: Palestine, November 22-24. Sec., Dr. R. H. McLeod.

WEST VIRGINIA: Morgantown, November 14-16. Sec., Dr. H. A. Barlow, Point Pleasant.

Louisiana Homeopathic May Report

Dr. John T. Crebbin, secretary of the Louisiana Homeopathic Board of Medical Examiners, reports the written examination held at New Orleans, May 2, 1910. The number of subjects examined in was 9; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. Three candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College.	Year of Graduation.
Chicago Homeopathic Medical College	(1897)
Pulte Medical College, Cincinnati	(1897)

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Hering Medical College	(1903)	Missouri
Hahnemann Medical College and Hospital, Philadelphia, Virginia;	(1904) (1908)	Pennsylvania.

Mississippi May Report

Dr. S. H. McLean, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, May 10-11, 1910. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 192, of whom 59 passed, including 31 non-graduates and 133 failed, including 87 non-graduates and one osteopath. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined.
University of Alabama	(1910)	1
Howard University, Washington, D. C.	(1902)	1
University of Louisville	(1910)	1
Tulane University of Louisiana	(1910)	2
Mississippi Medical College	(1908) (4, 1910)	5
Albany Medical College	(1861)	1
University of Pennsylvania	(1907)	1
Vanderbilt University	(1909) (1910)	2
College of Physicians and Surgeons, Memphis	(1910)	2
Memphis Hospital Medical College	(1910)	6
Meharry Medical College	(1909)	1
University of Tennessee	(1907) (1909)	2
Universities of Nashville and Tennessee	(1910)	1
Medical College of Virginia	(1899)	1
University of Virginia	(1905)	1

FAILED

Harvey Medical College, Chicago	(1897)	1
Tulane University of Louisiana	(1910)	2
Baltimore Medical College	(1893)	1
Mississippi Med. Coll.	(1908) (2, 1909) (8, 1910)	11
St. Louis College of Physicians and Surgeons	(1908)	1
Memphis Hospital Medical College (1894) (1891) (1906) (1907) (2, 1908) (2, 1909) (9, 1910)		17
Universities of Nashville and Tennessee	(1910)	2
University of the South	(1903)	1
College of Physicians and Surgeons, Memphis	(1910)	2
University of Nashville	(1902) (1906) (1909)	3
Meharry Medical College	(1907) (1908)	2
Knoxville Medical College	(1908)	1
Gate City Medical College	(1906)	1

Michigan June Reports

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Battle Creek and Ann Arbor, June 14-16, 1910. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and at least 50 in each subject.

At the examination held at Battle Creek, the total number of candidates examined was 9, all of whom passed. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
American Medical Missionary College	(1904)	84.5; (1910) 79.2, 84.6, 85.3, 85.7, 86.8, 87.5, 88.2, 89.7.

At the examination held at Ann Arbor, the total number of candidates examined was 75, of whom 74 passed and one was conditioned. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1878)	90.5
American Medical Missionary College	(1905)	78.4
Louisville Medical College	(1902)	79.2
Harvard Medical School	(1910)	87.4
Detroit College of Medicine	(1903)	77.3
University of Michigan College of Medicine and Surgery	(1910)	78.4, 78.5, 78.7, 79.2, 79.3, 79.8, 80, 80.1, 80.1, 80.2, 81, 81.1, 81.1, 81.5, 81.5, 81.7, 81.8, 82.5, 82.5, 82.6, 83, 83.1, 83.5, 83.6, 83.8, 83.9, 84.1, 84.1, 84.3, 84.4, 84.5, 84.6, 84.6, 84.7, 84.8, 84.8, 84.8, 85, 85.1, 85.2, 85.2, 85.3, 85.4, 85.4, 85.5, 85.9, 85.9, 86.1, 86.1, 86.5, 86.7, 87.2, 87.5, 88.5, 88.8, 88.9, 89.
University of Michigan Homeopathic College	(1910)	78.2, 79, 79.4, 80.3, 82.5, 82.5, 82.8, 83.1, 85, 87.1.
University of Buffalo	(1909)	85.9
Jefferson Medical College	(1910)	81.7

CONDITIONED

Univ. of Michigan, Coll. of Med. and Surgery	(1910)	*75

* Condition; fell below 50 per cent. in chemistry and toxicology.

New Jersey Reciprocity Report

Dr. H. G. Norton, secretary of the New Jersey State Board of Medical Examiners, sends us a report of those licensed through reciprocity from November 6, 1909, to July 12, 1910. The following colleges were represented:

PASSED

College.	Year Grad.	Reciprocity with
Georgetown University	(1909)	New York
Baltimore University	(1901)	New York; (1903) Illinois
University of Maryland	(1909)	Delaware
Baltimore Medical College	(1906)	Maine; (1907) New York; (1908) Vermont.
Maryland Medical College	(1906)	Vermont
Atlantic Medical College	(1909)	Delaware; (1909) Maine
Harvard Medical School	(1900)	New York
Albany Medical College	(1904) (1905) (1908)	New York
Syracuse University	(1906)	New York
New York University Medical College	(1896)	New York
Eclectic Medical College of the City of New York	(1905) (1906) (1909)	New York.
New York Homeopathic Medical College and Hospital	(1905) (1907) (3, 1909)	New York.
Long Island College Hospital	(1897) (1898) (1899) (1907) (1909)	New York.
Cornell University Medical College	(1900) (1906) (2, 1907) (1908) (3, 1909)	New York.
University of Buffalo	(2, 1907)	New York
Columbia University, College of Physicians and Surgeons	(1896) (1905) (1906) (1908) (3, 1909)	New York.
University and Bellevue Hospital Medical College	(1906) (2, 1907) (4, 1908) (7, 1909)	New York.
University of Pennsylvania	(1901) (1903) (1904) (1909)	New York.
Jefferson Medical College	(2, 1908)	New York
Hahnemann Medical College and Hospital, Philadelphia	(1896);	Pennsylvania; (1909) New York.
University of Virginia	(1904)	New York
McGill University, Montreal, Canada	(1904)	Maine
University of Naples, Italy	(1902)	New York
University of Bukharest, Roumania	(1900)	New York

Indiana January and July Reports

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examinations held at Indianapolis, January 11-13 and July 12-14, 1910.

The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held in January, the total number of candidates examined was 21, of whom 19 passed and 2 failed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1908)	75.1; (1909) 75.9, 86.5, 88.
Jenner Medical College	(1907)	75.2
College of Physicians and Surgeons, Chicago	(1909)	80.3
Northwestern University Medical School	(1909)	77, 81.8
Indiana Medical College	(1898)	82.9
Indiana University	(1909)	84.8
Louisville Medical College	(1905)	86.6
Harvard Medical School	(1908)	87.6
Univ. of Michigan, Coll. of Medicine and Surgery	(1909)	88.7
University of Michigan, Homeopathic College	(1910)	85.6
University and Bellevue Hospital Medical College	(1907)	83.8
Medical College of Ohio	(1882) 75.5; (1907)	83.5
University of Pennsylvania	(1906)	84.8
Woman's Medical College of Pennsylvania	(1902)	75.6
FAILED		
Indiana University	(1909)	68.5
Medico-Chirurgical College of Philadelphia	(1906)	68.4

At the examination held July 12-14, the total number of candidates examined was 86, of whom 79 passed, including one osteopath, and 7 failed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1909) 81.8; (1910) 84, 84.4.	
Bennett Medical College	(1910)	91.3
Hering Medical College	(1910)	88.6
Hahnemann Med. Coll. and Hospital, Chicago	(1908)	75.2
Illinois Medical College	(1910)	87.9
Indiana University	(1909) 75; (1910) 75.9, 79.5, 79.5, 80.6, 81, 81.4, 81.5, 82.1, 83, 83.2, 84.3, 84.4, 84.6, 84.7, 84.7, 85.5, 85.5, 85.6, 85.7, 85.7, 86, 86.1, 86.5, 86.6, 87.1, 87.2, 87.3, 87.3, 87.9, 88.2, 88.3, 88.5, 88.6, 88.7, 89.3, 89.5, 89.6, 89.6, 90.2, 90.2, 90.4, 90.5, 90.5, 90.7, 90.9, 91.1, 91.5, 91.8, 92.3, 92.9, 92.9.	
University of Louisville	(1910) 80.8, 81.9, 84.2, 84.3, 85.1, 85.8, 86.5, 88.8, 91.6.	
Baltimore Medical College	(1907)	86.8
Johns Hopkins University	(1910)	86
University of Michigan, Dept. of Med. and Surg.	(1909)	85.5
St. Louis University	(1910)	90.3
Eclectic Medical College, Cincinnati	(1910)	82.2
Pulte Medical College	(1910)	81.2
Hahnemann Med. Coll. and Hospital, Philadelphia	(1909)	83.8
University of Pennsylvania	(1910) 89.6, 92.3	
Queen's University, Kingston, Ontario	(1908)	88.4
FAILED		
Hahnemann Med. Coll. and Hospital, Chicago	(1907)	72.8
Indiana Medical College	(1890)	66.9
Southwestern Homeo. Coll. and Hospital, Louisville	(1906)	63.4
Kentucky School of Medicine	(1889)	64.8
St. Louis College of Physicians and Surgeons	(1907)	61.4
Eclectic Medical College, Cincinnati	(1910)	56
Regia University, Pavia, Italy	(1891)	69.2

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A PRACTICAL BUSINESS BUREAU FOR COUNTY SOCIETIES

H. G. Langworthy, M.D.
DUBUQUE, IOWA

A movement to establish business bureaus for county societies with an attorney who will make a systematic attempt to collect old bills, will doubtless meet the approval of physicians. Older members may not at first regard such a system with favor. They will say, and with some truth, that "such schemes have been tried and failed." This does not prove that the plan is fundamentally wrong, but that it must be practical and sound, or it is pretty sure to fail. But even failures have their lessons.

The plan which I present for your approval and which I have succeeded in having adopted by the Dubuque County Medical Society, simplifies as much as possible the ordinary plan of business cooperation and applies it to county societies in smaller cities, where it is often badly needed. An elaborate self-running bureau adapted to a city of a million population is not fitted altogether for a business bureau in small communities. I hope that some such plan may be adopted by every county medical society.

The reasons for the creation of a collection bureau for county societies are: 1. If all collections are made by the collection department patients cannot take offense against physicians for collecting through this bureau bills running over twelve months. 2. Many patients now regarded as subject of charity (not through necessity, but simply through unwillingness to pay a doctor's bill) would be induced to pay their bills. 3. The attorney representing the society would be able to make systematic quarterly collections better than anyone else. While the placing of bills in the hands of the attorney should be optional, it would seem clear that an able attorney, making a special business of this work, could handle medical accounts better than some unknown and irresponsible outside collection agency.

I will briefly outline the plan of the bureau at Dubuque, the result of two years' work on this subject. Modifications must be made as time and local conditions demand. I will furnish printed copies of the abstracted plan in detail on application.

INSTALLATION AND PLAN OF BUSINESS BUREAU FOR COUNTY SOCIETIES

WHEREAS, It is deemed advisable that the ———— County Medical Society should adopt a business bureau; therefore, be it

Resolved, In meeting duly assembled, this ————day of December, A.D. 19—, that the same be, and is hereby, adopted, and known as the business bureau of the ———— County Medical Society, and that the said bureau be conducted along the lines and governed according to the following:

1. That ———— shall act as attorney for the ———— County Medical Society in the capacity of conducting the business of the "Business Bureau" of said society, and pursuant thereto said attorney will call every three months on physicians who are members of the———— County Medical Society for statements of accounts and will give receipts for same. That he will keep a separate and private file for each physician's accounts and correspondence. That he will keep a complete system on which will be notated the exact status and progress of each account. That he will make quarterly returns direct to the physicians as the business bureau committee may direct. That he will not bring suit on accounts without authorization and private arrangement with the physician. That he will assist the committee in auditing accounts. That each physician's account will be open to his inspection at any time, but to no other physician; and that all other business matters will be kept absolutely private. That due diligence will be exercised in collecting all accounts turned over, and prompt settlement made after collection.

2. That the respective physicians will submit itemized statements of such accounts as they desire to place in the collector's hands. That physicians will receive remittances made directly to them from debtors. That on remittances made directly to the physician on accounts in the attorney's hands, commissions will be paid, but no commission will be allowed on bills remaining unsettled or on money not collected.

3. That the committee of the business bureau of the ———— County Medical Society may, at any time, audit the accounts in the hands of the attorney, and shall in cases of dispute distribute to the attorney the amount of his commission and to the physician the amount due him on such accounts. That the commission to the attorney on accounts collected shall be scheduled as follows, and on accounts collected in payment or installments the schedule per cent., per payment, will prevail:

Collections of $2 or under	50 per cent. commission
Collections of $3 or under	40 per cent. commission
Collections of $4 or under	30 per cent. commission
Collections of $5 to $10	25 per cent. commission
Collections over $10	20 per cent. commission

4. That all expenditures in conducting the collections by way of record files, all paper, envelopes, stamps, etc., shall be borne by the attorney.

5. That said attorney, ————————, shall be appointed by the committee for a term of three years, subject, however, to removal by the business bureau committee or society for unwarranted neglect, dishonesty or general incompetency.

6. That the attorney shall arrange a reference list as to financial standing and responsibility of patients, accessible to members of the ———————— County Medical Society, but to none others. This list, together with such additional lists and information deemed justly the private property of the society, shall be turned over to his successor in case of withdrawal, dismissal, or for any other reason.

7. These articles and the power given the business bureau committee may be altered or curtailed by a two-thirds vote of members present and voting at any regular meeting, previous notice of such action having been given all members sixty days in advance.

It will be noted in the foregoing that the bureau has been established by the adoption of a simple resolution, and that no iron-clad contract is entered into between the society or the business bureau committee and the attorney. The commission schedule here adopted is the one furnished me by the manager of the Business Bureau of the Chicago Medical Society. While unquestionably a little high, it probably forms the best working basis of any present schedule, especially as many of our first accounts are most undesirable.

REPORT OF BUSINESS BUREAU OF THE DUBUQUE COUNTY MEDICAL SOCIETY FOR FIRST SIX MONTHS

The following report of the attorney to the Business Bureau Committee of the Dubuque County Medical Society will be found of interest:

I herewith submit a statement of money collected by the said bureau for the first six months of the year 1910, ending July 1, 1910, as follows: January, $105.50 February, $161.50; March, $228.50; April, $109; May, $23; June, $29; total, $656.50. In addition to the above, the bureau has collected in partial payments on bills not yet fully paid the sum of $213.15. The total amount of bills turned in to the bureau for the first six months was $8,176.53. There is represented in this amount many dollars of accounts that are absolutely worthless, for the reason that some debtors have left the city, a few cannot be located, some refuse to pay—in that they claim to be unable to make even a very small payment on their bills and will not make any promise of any definite time they will pay even a part, and other bills are what is known as outlawed.

The $656.50 in money paid into the bureau represents $958.50 of accounts turned in to the bureau. In other words, in order to collect $656.50 it was necessary to make reductions in the bills of $293, which is about a 45 per cent. reduction, which goes to prove the character of the bills so far as collecting them is concerned. In each instance the physician is consulted and the bureau authorized before a compromise or reduction is made. All debtors whose bills have been turned in to the bureau have been written to from one to three or more times, and nearly all who have not responded materially or came in person to the office of the bureau have been personally interviewed. At the end of one year from the time of placing bills the bureau will have been able to collect or report same uncollectable. Of the $656.50 collected all has been turned over to the physician due him therefrom, excepting $3, which is still in the hands of the bureau.

Among the experiences of the bureau may be mentioned: (1) Most of the members have at some time availed themselves of the use of the bureau. (2) All bills placed in the hands of the bureau have been carefully investigated in each case and the large majority of debtors visited personally by the attorney. (3) Debts have been divided into the two divisions: (A) collectable, and (B) uncollectable. (A bill on which 50 cents or $1 a week is being paid is placed in Class A.) (4) Almost without exception early bills turned in have passed through other hands for collection, in some instances repeatedly, without results, making it hard for the bureau to get a good start. (5) A considerable number of first accounts handed in were legally outlawed by the time limit of five years on book accounts. (6) Our attorney has found in some instances families charged practically the usual rate who ought to be considered little better than charity subjects. Doctors should discriminate carefully, and should not overcharge the poor laborer or the struggling clerk. (7) The establishment of a county society business bureau in Dubuque has resulted in a saving to the society of a considerable amount of money the past six months.

Occasionally physicians have thought it best not to hand in accounts unless they have been reported as worthless in other hands, the idea being that the commission rate charged would not warrant the placing of easy bills with the bureau. We hope that in the future physicians will find it to their interest to call up the bureau and discuss the matter thoroughly before using other agencies. At present our bureau sees no way to lower this scale, which, while a trifle high, forms the best working basis of any schedule which could be adopted. The future must demonstrate the advisability of lowering our scale; the past certainly has not. Whether the bureau will be able eventually to cooperate with the physicians on a slightly different basis should they wish to turn in on the first of every month all fair bills within their possession, remains to be seen.

The bureau has been of value in dealing with delinquents, as it always stands ready to collect at once or to bring early suit in court at a minimum cost without inconveniencing the physician.

In conclusion, I would like to emphasize the value of our bureau in educating delinquents by stirring up the careless and listing those who are really unworthy of credit. The optional feature, allowing physicians to turn in only such accounts as they desire, is also of value. The society is under no expense, as many young attorneys will take up the work on the basis outlined. A business bureau is not necessary in small communities, where each physician knows all about his families or can tell the other doctors the names of the shiftless and unworthy.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—First Weekly Meeting

General Subject for the Month: Surgery of the Kidney and Ureter

ANATOMY

KIDNEY: Situation, surface markings, important relations, size, weight, surfaces, borders, extremities. Means of fixation, by three capsules. Relation of structures entering hilum. Relation of vascular supply to pelvis and calyces. Brödel's white line.

URETER: Structure.—Location, length, diameter, constrictions, dilatations, course, relations. Pelvic relations in male; in female.

SURGERY OF THE URETER

SURGICAL LESIONS OF THE URETER: Surgical injuries, puerperal injuries, congenital fistula, tuberculosis, pyoureter, calculus, malignant disease.

DIAGNOSIS: Pain, urine or purulent discharge in fistula, examination of ureteral orifices by cystoscopy, catheterization of uterers. *X*-ray in calculus.

TREATMENT

SURGICAL INJURIES: Immediate treatment; technic of ureteral anastomosis; end-to-end, lateral and end-to-side; ureterovesical anastomosis. Late operations; treatment of ureteral fistulæ.

CALCULUS OF URETER: Localization of stone. Site of incision. Variations in technic.

TUBERCULOSIS OF URETER: Secondary to renal tuberculosis. Indications for surgical treatment. Technic of nephroureterectomy, of ureterectomy.

STRICTURE OF URETER: Diagnosis; treatment.

REFERENCE BOOKS FOR THE THIRD MONTH

Kelly and Noble: Gynecology and Abdominal Surgery, vol. II.
Watson and Cunningham: Diseases and Surgery of the Genitourinary System.
White and Martin: Genitourinary Surgery and Venereal Diseases.
Caspar: Genitourinary Diseases.
Morris: Surgery of the Kidney and Ureter.
Edebohls: Surgical Treatment of Bright's Disease.
Garceau: Renal Tumors.
Keen: Surgery.
Bryant and Buck: Surgery.

Book Notices

PRÉCIS DU TRAITEMENT DES FRACTURES PAR LE MASSAGE ET LA MOBILISATION. Par Dr. Just Lucas-Championnière, Chirurgien Honoraire de l'Hôtel-Dieu. Paper. Price, 3.50 francs. Pp. 267. Paris: G. Steinheil, 2 rue Casimir-Delavigne, 1910.

In this little treatise Lucas-Championnière amply justifies his claim to the title of pioneer in the treatment of fractures by massage and mobilization. The first half of the book is largely devoted to a general consideration of massage in its application to fractures and the manner of performing the various passive and active motions. The advantages of these maneuvers are enthusiastically lauded, and justly so, when one recalls the dire functional results of too long immobilization. While the text, on the whole, would be improved by being condensed, and much detail could be omitted, the careful reader will find much in the way of sound advice and wisdom, the fruit of long clinical experience. The author very properly refers to the frequent errors which are made in the interpretation of radiographs, mere shadow pictures, and cautions against disregarding clinical phenomena and the findings of a careful clinical examination.

The book is too radical for the use of students, but should prove both interesting and profitable reading for surgeons interested in fractures. The following are a few extracts from its pages: "It is not immobilization which favors the formation of callus, but motion"—"immobilization interferes with the vitality of the limb."—"Pain is relieved by certain forms of motion. Immobilization is a secondary factor."—"There can be delayed union in spite of immobilization. Stiff joints and useless limbs follow immobilization."—"A certain amount of motion between the fragments favors the development of callus."—"Reduction is in many cases unnecessary, in others positively dangerous." The author admits that he sutures the patella, because the fragments cannot be approximated. In Colles' fracture, reduction is regarded as generally useless unless the deformity is great. Daily massage and motion are indulged in, and the patients are urged to use their arms. The principle throughout the book seems to be to disregard the cosmetic result in favor of restored function, even in the presence of overriding. With the *x*-ray controlling our results nowadays, how long could a surgeon last who went on that principle in America?

Fractures about the elbow in children, and fractures of the clavicle, are daily massaged. The effect of the treatment is to relieve the spasm and relax the muscles, thus eliminating the traction on the fragments, which fall into place.

The enthusiasm of the author has unquestionably carried him too far in attempting to apply to all fractures the principle of massage to the exclusion of all else. The description of the technic in individual fractures is frequently so brief and vague as to preclude imitation. Yet the little book will have fulfilled a most valuable mission if it will recall to the average practitioner and surgeon that he is immobilizing too strenuously, and keeping splints on entirely too long, that the latter can be more often removed for the purpose of massage and passive motion, and better results obtained.

FACTS AND PROBLEMS OF RABIES. By A. M. Stimson. Bull. 65, Hyg. Lab., U. S. P. H. and M.-H. S., June, 1910. Paper. Pp. 90, with illustrations. Washington: Government Printing Office, 1910.

A timely and most excellent review of the "Facts and Problems of Rabies" has just been issued by the Hygienic Laboratory of the Public Health and Marine-Hospital Service, from which the following statements are selected for the purpose of emphasis: "There has been handed down from the ages, when superstition and ignorance had as yet received but little counterbalancing check from the influence of reasonable or scientific investigation, a mass of erroneous belief which, in its extent and fantastic distortions, probably exceeds that to which any other malady has fallen heir." "There still remain persons who are skeptical concerning, or even deny the existence of, rabies as a distinct disease. If they are fair-minded and possess an average amount of intelligence, a visit to a laboratory where scientific work in this direction is being done will suffice to dispel their objections, even if their faith in human nature is so slight that they are able to regard those investigators who have devoted years of disinterested study to the subject as untruthful or very badly mistaken."

"Since it has been demonstrated that, by comparatively simple measures, the disease can be reduced to a minimum or even wholly eradicated, it is raised to an importance disproportionately great to the frequency of its occurrence compared with that of less remediable maladies. The continued existence, not to say increase, of rabies in animals and man is a reproach on the efficiency of organized medical bodies for the suppression of disease." "We have now, and have had for a long time, all the knowledge of rabies necessary to effect its entire suppression. This knowledge can be summed up in a single sentence, to wit: Rabies is perpetuated in the dog through the infliction of bites by a rabid dog, and does not arise spontaneously. If all rabid dogs could be prevented from biting other animals, rabies would in the course of a year be a mere historical curiosity of medicine, an illegitimate field of research for the investigator in pure pathology, a plaything for the controversialist. There are few infectious diseases the prevention of which rests, as in rabies, on a single definite measure."

AN INTERNATIONAL SYSTEM OF OPHTHALMIC PRACTICE. Edited by Walter L. Pyle, M.D., Philadelphia, Member of the American Ophthalmological Society. Therapeutics. By Dr. A. Darier, Paris. Translated by Sydney Stephenson, F.R.C.S., London, Late Honorary Secretary of the Ophthalmological Society. Cloth. Price, $4 net. Pp. 444, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This portion of Pyle's "System of Ophthalmic Practice" is devoted to therapeutics and was written by Dr. A. Darier of Paris, who is peculiarly fitted to present this subject. Dr. Darier is fortunate in having his work translated into English by Mr. Sydney Stephenson. The more recent diagnostic methods, both general and special, are dealt with as well as the general treatment indicated in those eye diseases associated with general disease. The complications and after-treatment of surgical procedures on the eye are discussed exhaustively. Nothing is offered regarding the important relations existing between the eyes and the nasal cavities; otherwise the book merits approval. It is compact and practical and presents the latest methods of ophthalmic practice in a clear, concise manner.

A MANUAL OF PERSONAL HYGIENE. Proper Living on a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, M. D., Member of the American Ophthalmological Society. Fourth Edition. Cloth. Price, $1.50 net. Pp. 472, with 131 illustrations. Philadelphia: W. B. Saunders Co., 1910.

This book is for the layman and deals with "the one subject which every fair-minded person admits should be taught thoroughly—namely, how to keep healthy . . ." The way in which this subject is handled by the various authors who contribute to this work is eminently sane, catholic and generally admirable. To the chapters on the hygiene of the digestive apparatus, of the skin and its appendages, of the vocal and respiratory apparatus, of the ear, of the eye, of the brain and nervous system and on physical exercise that appeared in the previous editions have been added ones on body-posture and domestic hygiene. There is also an appendix, and a glossary of such technical terms as have been unavoidably used.

PRÉCIS D'AUTO-SUGGESTION VOLONTAIRE. Par le docteur Gerard Bonnet, d'Oran, Officier de l'Instruction Publique. Paper. Price, 3 francs. Pp. 300. Paris: Jules Rousset, 1, Rue Casimir-Delavigne, 1910.

This book seems to have been written for the layman. The author has great belief in free will and in the power of the individual to control his thoughts in any direction. There are some valuable suggestions, especially in the chapter on concentration of the thought. The book adds nothing to our knowledge. It states in a manner tended to make its point appreciated the strength and value of hypnotism and suggestion whether from without or within.

Medicolegal

Points From Suit Against Alienists for Damages for Alleged Negligence in Examination as to Sanity

The Second Appellate Division of the Supreme Court of New York says that the case of Warner vs. Packer and another (123 N. Y. S. 725) was for negligence. The plaintiff had been confined for a time in an insane asylum on her husband's petition, to which was annexed a certificate of the defendants as examiners in lunacy that she was insane and was a proper subject for custody and treatment in some institution for the insane as an insane person. She complained that the defendants had made a false, pretended, and grossly negligent examination of her as to her mental condition, that she was not insane then or at any time, that the defendants willfully failed and neglected to use or to exercise reasonable and ordinary care, skill, and diligence to ascertain her true mental condition, or to make a prudent and careful inquiry and proof whether she was sane or insane, and failed to exercise their best judgment as to her sanity, but with gross and culpable negligence based their opinions on false and pretended statements made to them by her husband. She gained a verdict for $25,000, and the defendants appealed from the judgment thereon.

The defendants were feed by the husband to make an examination. Thereupon they impliedly represented that they possessed the reasonable degree of learning and skill ordinarily possessed by the average examiners in lunacy, and in the rendition of the services they undertook to use such skill and learning, to exert their best judgment in the application thereof, and to exercise reasonable care.

The burden was on the plaintiff to show that the defendants fell short in their qualifications or their obligations. The plaintiff did not advance the proposition that the defendants were not qualified. On the other hand, the evidence showed that they were educated in their profession, alienists who as such had filled important public positions, and were of large experience gained from thousands of examinations. The court therefore need not consider that ground of liability. The question on the appeal was whether the plaintiff made proof to justify the verdict of negligence in the ascertainment of her true mental condition. The defendants testified in detail as to their professional conduct.

The plaintiff's case consisted largely of testimony of lay witnesses, her acquaintances and friends, that in their opinion specified words and acts of hers were rational. She contended that at all times she was sane. Such contention, so far as it related to the time of her examination, was essential, inasmuch as she could not have been harmed by a certificate of the truth unless her insanity did not require restraint and treatment. A certificate of her insanity when she was sane could establish error of judgment, but for that the defendants were not liable; and it could be considered as evidence bearing on the defendants' qualifications or indicating failure to fulfill their obligations as to skill, learning, care, and best judgment in the case. But no presumption of negligence in the defendants arose solely on the establishment of her sanity at the time of her examination by the defendants.

A striking feature in the plaintiff's case was the omission of any scientific or expert evidence as to the course pursued by the defendants in the examination, as to what was done that the average examiner in lunacy would not have done, or as to what was not done which such an examiner would have done under the circumstances of the case.

We know insanity is a mysterious disease, that it may exist without physical indications, is often cunningly concealed so as almost or altogether to baffle detection even by a specialist, or may be so occult as to cause most eminent alienists to clash as to its existence in an instance. The diagnosis of it is recognized as a difficult task. It seems to the court that the very nature of the subject—the question of negligence is a diagnosis—would almost preclude a jury from passing on it by their common knowledge unaided by any scientific or expert information whatever, or by the testimony of any witnesses of special knowledge and skill. Yet there was not in evidence any standard for comparison of the conduct of the defendants with that which was required of them.

Nor does the court think that any negligence could be imputed in this case to the omission to make further inquiries, although it was recognized in a leading English case (Hall vs. Semple, 1 F. & F., 337) that such obligation might exist. The husband's narrative was of the relations between him and his wife—this plaintiff—of her conduct and her bearing towards him. Husband and wife appeared as living under the same roof, and there was no indication that there was any one whom the defendants could have consulted in corroboration of the husband, save of course, the wife.

There was ground for surmise that the jury found negligence from the premise that the plaintiff was sane at the time the defendants certified that she was insane, for the minutes showed that they "returned their verdict in which they find that Mrs. Warner was, on the 13th day of July, sane and rational and find doctors guilty of negligence and fix the damages at $25,000." But the finding of sanity was no more a part of their formal verdict than would be a finding in a verdict for the plaintiff in a negligence case that the plaintiff was not chargeable with contributory negligence. On consideration of the case in the light most favorable to the plaintiff, as was her due, the court fails to find sufficient evidence to support the verdict. Wherefore, the court reverses the judgment appealed from and grants a new trial.

Matters on Which Expert Witnesses may be Questioned

The Supreme Court of Florida holds, in Pensacola Electric Co. vs. Bissett (52 So. R. 367), a personal injury case brought by the latter party, that, although an expert witness may not be questioned, either on his direct or cross examination, on an hypothesis having no foundation in the evidence, yet it is not required that the hypothetical case put to him should be an exact reproduction of the evidence, or an accurate presentation of what has been testified to. Counsel may present to him any hypothetical case in accordance with any reasonable theory based on the evidence; but, in the event that the jury should find that the facts on which such hypothesis or theory of the case was based have not been proved, the answer of the expert necessarily falls with the hypothesis.

An expert witness who has given his opinion on any question or hypothesis submitted to him may be further interrogated on his cross-examination as to the reasons for such an opinion. And for this purpose it is within the discretion of the trial court to widen the range of such cross-examination, even so as to include matters not strictly pertinent to the issues, in order to test the witness' means of knowledge, the extent of his information, memory, accuracy, or credibility, and an appellate court will not interfere with the exercise of such discretion, unless a clear abuse thereof is made to appear.

Insufficient Evidence to Sustain Conviction of Wrongfully Going on Street While Afflicted with Small-Pox

The Court of Appeals of Kentucky in Lawrence vs. Commonwealth (127 S. W. R., 1013) reverses a conviction had under the statute of that state which provides that "any person who, having reason at the time to believe himself afflflicted with the disease of small-pox, shall voluntarily go on any public highway or street, shall be guilty of a misdemeanor, and, on conviction, shall be fined not less than one hundred nor more than one thousand dollars." It says that the statute states that anyone having reason at the time to believe himself "afflicted" with the disease of small-pox, going on the public highway, etc., commits the offense. There was very slight evidence conducing to show that the accused might have had the small-pox, but there was none to show that he had reason to believe that he had it when he went on the streets and public highways. A Mr. Brown, the man with whom he boarded while working at a rock quarry with more than 50 persons, said to him one evening that he (Brown) believed that he had small-pox, and that he could not let him stay in the house that night, but that he could go to the barn and sleep in the hay. The accused went to the barn, but got so cold during the night that he had to get up and leave. None

of the persons who worked with him at the rock quarry took the smallpox, but several of Brown's family did have it. There was no evidence showing that he went on the streets or public highways after Brown told him that he believed that he had the smallpox, and Brown's statement to him was the first thing to indicate to the accused that he had any reason to believe that he had the smallpox, and he went to the barn, as Brown told him, to sleep, but grew so cold during the night that he had to leave, and went to his home in another county. The accused testified that he did not believe at the time that he had the smallpox, and stated that he did not have it; that the eruption he had on his face was common to him yearly from infancy. He was corroborated in this statement by both his father and brother, and there was no evidence to the contrary. As stated, there was but very slight evidence to the effect that he had the smallpox and none that he had reason to believe that he had it when he voluntarily went on the streets and public highways, and the court should have instructed the jury peremptorily to find him not guilty.

Physician Prevented from Testifying to Account

The Supreme Court of North Carolina says, in the case of Knight vs. Everett, as administrator (67 S. E. R. 328), that it was an action for medical services rendered by the plaintiff, a physician, to the decedent of whose estate the defendant was administrator. The physician was offered as a witness in his own behalf to prove that he attended on the decedent, had an account against him therefor, to prove the items of the account, the number of visits he made, the sum due therefor, and the value of his services. Each of these questions was objected to, and the evidence was properly ruled out. Such evidence was clearly as to "personal transactions" with the deceased, and incompetent under the terms of the North Carolina statute, the defendant administrator not having testified as to these matters, and the statute providing that a party to, or interested in the event of, a suit shall not be examined as a witness in his own behalf or interest against the adminstrator, etc., of a deceased person "concerning a personal transaction or communication between the witness and the deceased person," except where the administrator, etc., is examined in his own behalf, or the testimony of the deceased person is given in evidence concerning the same transaction or communication. The plaintiff physician could not prove by his own testimony either an express contract, which would be a "communication" with the deceased, nor an implied contract, by showing a "personal transaction," as services rendered.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

October

1 Street Dust as a Factor in Spreading Disease. J. M. Anders, Philadelphia.
2 Surgery in Relation to Nervous Patients. L. N. Lanehart, Hempstead, N. Y.
3 Gonococcus Infection of the Kidney. F. R. Hagner, Washington, D. C.
4 Carcinoma of the Splenic Flexure of the Colon Treated with Neoformans Vaccine. C. D. Aaron, Detroit, Mich.
5 Diagnosis of Incipient Pulmonary Tuberculosis. H. H. Pelton, New York.
6 The Metreurynter Incision of Dührssen in Treatment of Placenta Prævia. S. W. Bandler, New York.
7 Neuritis. W. B. Snow, New York.
8 Stricture of the Male Urethra. W. B. Brouner, New York City.

New York Medical Journal

October 1

9 Importance to Physicians of the New Employers' Liability Law. J. J. Moorhead, New York.
10 Twilight Talks by the Doctor. G. F. Butler, Chicago.
11 Bubonic Plague in Ground Squirrels. G. W. McCoy, San Francisco.
12 Scarlet Fever. J. Sobel, New York.
13 Aconite. J. Knott, Dublin, Ireland.
14 Case of Double Tertian Malarial Infection. D. H. B. Ulmer, Philadelphia.
15 The Modern Brown Bread Pill. J. J. Buzzell, Brooklyn.
16 Postoperative Complications in a Case of Acute Secondary Glaucoma, A Case of Mature Senile Cataract, and A Case of Sudden Death While Performing Iridectomy for Acute Glaucoma. D. F. Harbridge, Philadelphia.

Boston Medical and Surgical Journal

September 29

17 *Plastic Surgery of the Ovaries and Tubes. W. C. Seelye, Worcester, Mass.
18 *Postoperative Pneumonia Without Mortality in Two Thousand Consecutive Surgical Operations at the Free Hospital for Women. W. P. Graves, Boston.
19 *Analysis of Seventy-two Cases of Pneumothorax. J. B. Ayer, Boston.

17. **Plastic Surgery of Ovaries and Tubes.**—The patients on whom Seelye has operated in the past two years, 9 single and 12 married, or 21 in all, represent cases of dysmenorrhea and irregularities in catamenia; 10 patients had resection of one ovary; 5 had double resection of ovaries; 6 had resection of one and extirpation of the other ovary. Of these, all but one woman had marked immediate relief from dysmenorrhea, and the relief has held to the present time. In 2 of these cases dysmenorrhea was so severe that the patients had to go to bed for several days at each period. The intervals were shortened, and the patients had only about one week free from pain between periods. These women were not only relieved of dysmenorrhea, but the periods became normal in time. The one patient unrelieved was among the first 10 and one in whom, Seelye, says, resection or extirpation of the untouched ovary ought to have been done, for it was large and cystic.

Of the remaining 14 patients, 4 were over 40 years of age and had chronic inflammation of both tubes and ovaries. Total extirpation was performed in each. One had a large cyst combined with a pus tube on one side, which was removed with the tube; 8 had resection of one or both tubes on account of occlusion from past inflammation—the lumen was left patent, and the ovary brought into close contact with the proximal end of the tube. In these 14 patients, the late results in 4 are unknown; the rest have been in good health with no symptoms. No pregnancies have yet been reported. Seelye pleads for more abdominal operations on the pelvic organs in cases of severe dysmenorrhea, and, emphasizes the importance of classification as an aid in determining the mode of procedure in a given case for operation on the ovaries and tubes.

18. **Postoperative Pneumonia Without Mortality.**—As a result of an examination of these cases, consisting of over 1,000 laparotomies, Graves concludes that postoperative lung conditions occur somewhat more frequently and are more fatal in patients previously septic or desperately ill or in the aged and feeble. Operative shock, method of administration, length of time of the anesthesia, age of the patient unless extreme, physical type of the patient, bad behavior under ether, wound sepsis, pulmonary embolism, do not seem to bear any constant relationship to the causation of postoperative pneumonia. Postoperative pneumonia and bronchitis occur with great constancy during the cold weather months, and are rare during the summer months. Pre-existing foci of infection in the lungs are almost invariably lighted up or aggravated by operations under ether anesthesia. The following theory of causation is suggested by Graves. Most of the cases of postoperative lung complications are caused by the lighting up or the aggravation of pre-existing focal infection. Many postoperative pneumonias might be avoided by a more careful and more expert preoperative examination of the respiratory tract.

19. **Pneumothorax.**—Tuberculous cases comprised 69 per cent. of all cases of pneumothorax at the Boston City Hospital in twenty-eight years. Most patients were young or middle-aged men, and most had a recent history of less than six month's illness. The left side was most often affected. Pain and dyspnea were by far the most common symptoms at onset. A number of acute symptoms were less frequently of prime importance. The treatment in these cases was for the most part essentially that of the fluid present; the prognosis was anything but encouraging. Two rare cases are reported, one from subphrenic-intrathoracic abscess and one due to echinococcus. Artificial pneumothorax oc-

curred in 19 per cent. and possibly in 32 per cent. of the cases. Roentgen-ray examination has frequently made difficult cases clear, rendered diagnoses more exact, qualified prognosis and explained the effect of treatment. Since this form of examination has come into more constant use in the hospital, pneumothorax has been more frequently diagnosticated.

Lancet-Clinic, Cincinnati

September 24

20 *Diagnosis of Surgical Lesions of the Kidney. L. Frank, Louisville, Ky.
21 Cause and Pathology of Glaucoma. C. H. Castle, Cincinnati, Ohio.

20. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

Detroit Medical Journal

September

22 The Owen Bill for the Establishment of a Federal Department of Health and Its Opponents. S. A. Knopf, New York.
23 *Should the Physician Do His Own Dispensing? H. B. Garner, Detroit.
24 Arithmetic in Medicine. R. Wallace, Louisville, Ky.

23. **Physician's Dispensing.**—The reasons which are given by Garner why the physician should not dispense his own medicines are in brief as follows: He is a physician and not a pharmacist. His time with a patient must, if it results in the greatest good of the patient, be devoted to the diagnosis and treatment of his case. The country is loaded with an inferior class of goods and he is apt to employ cheap remedies in preference to the better qualities of pharmaceutical preparations. He cannot devote a proper amount of time to the preparation of active and reliable drugs and carry on a general practice successfully. His drugs of necessity must deteriorate. He falls into a routine way of prescribing pills, the formula of which has been studied by someone else, and often does not fill the bill. On the other hand, it is equally important to bring up objections urged against prescription writing. Druggists substitute. Druggists secure the business that rightfully belongs to the physician by counter prescribing. Patients pay the physician for the prescription and have it refilled any number of times without the physician's knowledge or advice. Garner urges that the medical and pharmaceutical professions join hands, having for their aim honesty, quality, and perfection. The hearty cooperation will bring forth apothecary shops that will be an honor to the owner and a credit to the employes.

Kentucky Medical Journal, Bowling Green

September 15

25 General Anesthesia. D. W. Barrow, Lexington.
26 Preventable Diseases. S. E. Hampton, Milton.
27 The Dührssen Operation for Cystocele and Prolapse of the Uterus. D. W. Barrow, Lexington.
28 Report of Some Malignant Cases. J. T. Dunn, Louisville.

Virginia Medical Semi-Monthly, Richmond

September 23

29 Differential Diagnosis and Treatment of Rheumatic Arthritis and Arthritis Deformans. J. C. Walton, Richmond.
30 Case of Acute Lymphatic Leukemia. E. F. Cooke, Houston, Texas.
31 *Cancer in Virginia—Trustworthy Vital Statistics the Foundation of Public Health—The Organization of a Cancer Association in Virginia. S. Harnsberger, Catlett.
32 Passing of the Intern as Anesthetist in Washington, D. C. C. N. Chipman.
33 Early Celiotomy for Ovarian Tumors. J. E. Rawls, Suffolk.

31. Published in the *Charlotte Medical Journal*, August, 1910, p. 87.

Northwest Medicine, Seattle, Washington

September

34 *Acute Anterior Poliomyelitis. W. House, Portland, Ore.
35 The Medical Practice Law. F. P. Witter, Spokane, Wash.
36 Life-Insurance from the Medical Examiner's Standpoint. E. V. Silver, Salt Lake City, Utah.
37 Postoperative Treatment. G. N. Pease, Portland, Ore.
38 Early Operation in Acute Intestinal Obstruction. C. N. Suttner, Walla Walla, Wash.
39 Trials of the Country Physician and His Relations to the Specialist. W. Appleby, Anacortes, Wash.
40 Relation of the Specialist to the Family Physician. H. V. Würdemann, Seattle.
41 Circulation in the Nose and Throat and Its Relation to the Rest of the Body. L. K. Klemptner, Seattle.
42 Toxemia and Eclampsia, with Special Reference to Its Etiology and Medical Treatment. S. H. Johnson, Bellingham, Wash.
43 A Case of Pellagra. W. B. Scott, Seattle, Wash.

34. **Acute Anterior Poliomyelitis.**—Throughout the winter of 1909-10, patients continued to come for after-care, but always reported the acute trouble as having occurred before the end of November, except in two instances, in which the disease developed in December. House saw 31 patients. They came from Portland, from along the lines of the Southern Pacific Railroad, from down the Columbia as far as Astoria, and one from near Weiser, Idaho. The lesion was in the lumbar region in 23, all children under 7, with consequent paralysis of the legs. One case was purely of the cerebral type. The patient, a child of 7, was unconscious and died without exhibiting any characteristic palsy. But the clinical picture seemed typical. Necropsy, performed 4 days after death, after decomposition had begun, revealed absence of gross pathologic lesion, which would be expected under the circumstances, House feels, confirmed the diagnosis. The remaining 6 patients exhibited symptoms of cervical involvement and 3 of them showed marked cerebral symptoms. These 3, all young children, died. Of the 3 patients in whom the lesion appeared to be entirely cervical all were girls of from 16 to 20 years of age. One died from respiratory insufficiency, and the others recovered with palsies to be later described.

So far as House's observations are concerned, there were no definite foci and no definite method of spread, except that the cases from out of Portland all came from along the line of the S. P. and O. R. & N. railroads. Roseburg appears to have been the center of an unusually large number of cases. In Portland the patients came from all parts of the city, without any apparent source of infection which could in any way account for the distribution and without any possibility of direct contagion from one to the other; nor does House know of any household in which two or more cases occurred. Personally, his belief in the infectious nature of this disease is strong, but is not based on any confirmatory evidence obtained from the recent epidemic.

Many of his patients derived relief from mild mustard plasters to the spine. If they were restless, bromids were used in moderate dose, supplemented with codein if pain was severe. If the lesion was in the lumbar region a little phenacetin was used, but never if the lesion was higher up, because of the danger to the already embarrassed respiration. House suggests that in patients in whom the lesion is cervical with the resulting impairment of respiration, atropin will be indicated, and inhalations of oxygen, together with artificial respiration, appear to have a just place in treatment. Rest in bed and quiet was urged, and throughout, a nutritious, easily digested diet was ordered. Attention was given to insure that the bladder was properly emptied. All attempts at massage were discouraged until pain had subsided. At this time small doses of strychnin will be helpful. House states, and electricity is indicated, but must be given with great care. The faradic current apparently is valueless, but the slowly interrupted galvanic current seems to do much good. Treatments should be given daily and should be short, not more than from 3 to 5 minutes to each affected limb. House used about 60 interruptions to the minute and feels confident that most patients derived great benefit from this treatment.

Ophthalmic Record, Chicago

September

44 Trephining for Glaucoma. G. Young, New York.
45 Choked Disc Possessing Some Unique Features. C. M. Harris, Johnstown, Pa.
46 Ossification of the Hyaloid Membrane. N. Vassiliades, Beyrout, Syria.
47 Homatropin. L. Emerson, Orange, N. J.
48 Use of the Schiotz Tonometer. W. B. Marple, New York City.

Cleveland Medical Journal

August

49 *So-Called Spontaneous Gangrene. R. Dexter and A. W. M. Ellis, Cleveland.
50 Tuberculin Reaction in Diagnosis of Tuberculous Conditions in Children. W. P. Lucas, Boston.
51 Hodgkin's Disease with Recurrent Fever. J. Phillips, Cleveland.
52 *Is a High-School Education Sufficient Preparation for the Study of Medicine? F. C. Waite, Cleveland.
53 Professional Duty. J. G. Spenzer, Cleveland.
54 Traumatic Insanity. H. H. Drysdale, Cleveland.
55 Scientific Research in State Institutions. C. H. Clark, Cleveland.

September

56 Management of Scarlet Fever in the Home. E. F. Cushing, Cleveland.
57 Location and Nature of Injuries of the Gastro-Intestinal Tract Following Abdominal Trauma. C. E. Briggs, Cleveland.
58 Stokes-Adams Disease. M. J. Lichty, Cleveland.
59 Nephritis, a Complication of Impetigo. J. Phillips, Cleveland.
60 Clinical Manifestations Among the Insane. J. D. O'Brien and O. D. Tatge, Massillon, Ohio.
61 Biliary Lithiasis and Inanition. M. Schott, Cleveland.
62 *Technic for Closing the Urinary Bladder After Suprapubic Opening. W. E. Lower, Cleveland.
63 *An Abnormality in the Form of the Femur. C. A. Hamann, Cleveland.
64 *Treatment of Varicose Ulcer of the Leg. M. Coplan, Cleveland.

49. **Spontaneous Gangrene.**—A review of the literature of this subject disclosed to the authors 73 cases, which they consider undoubted examples of spontaneous gangrene: 69 patients were males and 4 females. Two patients were under 20 years old, 7 were between 20 and 30; 9 between 31 and 35; 22 between 36 and 40; 12 between 41 and 45; 10 between 46 and 50; 10 between 50 and 60; 1, age not mentioned. Although the symptoms in one case were present for over 20 years—the average duration was from 3 to 5 years. In the 68 cases in which the location was mentioned, the condition occurred 53 times in the legs alone, twice in the arms alone, and 13 times in both upper and lower extremities. In more than one-third of the cases, the pulse in the femoral and all the vessels distal to it, was lessened or obliterated, while in nearly two-thirds the vessels as high as the popliteal were involved. Neither syphilis nor the use of tobacco seemed to play any part in the causation of this condition. The authors report one case seen by them. They believe that it was a case of general arterial thrombosis, exactly similar to that found in the extremities in the condition known as spontaneous gangrene.

52. **Preparation for the Study of Medicine.**—We may assume, says Waite, that everyone preparing to enter the medical profession hopes to work out a successful career. The medical career is one of many points of contact. It is not alone technical: it has its social, sociologic and public relations. Physicians and surgeons are not mere practitioners: they are also human beings. The physician is by his profession a semipublic servant: much more so than are members of most other professions. His calling brings him into contact with all conditions of men and his relation to these is very intimate. He is a factor in the general welfare of the community: not only in its physical welfare, but in its moral, mental and social prosperity as well. He is more than a technician or a tradesman, and he must—if he is to succeed—be prepared to discharge efficiently all these correlated obligations as well as to execute his main purpose of combating disease. He cannot confine his activities to diagnosis and the giving of medicine. He must be ready as adviser and friend. He must be prepared for public service. He needs the power of trained personality if he is to protect his entire constituency—the public at large—in the maintenance and advance of public health. And since he is more than a physician, he needs more than merely a medical training. The high school has given him a certain sort of training of a routine nature. Such is essential at that developing period of a boy's life, but not all-sufficient for the various demands of a medical career. It is different in kind from the college training and it needs supplementing before the technical studies of the medical curriculum are begun. A college training gives the student a breadth of view not obtainable in any other way.

Medicine is no longer an art but has become a science. It is more and more coming to be applied biology, chemistry, physics and psychology. The high school teaching of these subjects must needs be extremely elementary and superficial, and it is by no means adequate as a preparation for the studies of the medical curriculum. Nor can the medical school give these preparatory subjects properly and in logical order. A full four years is needed for the medical studies, without consuming time and energy in doing the preliminary work. The consensus of opinion after all the discussion of the past ten years on the various phases of medical education is that a high school education alone is not enough preparation to enable a student to get a medical education that is efficient and adequate, and that, if a boy is absolutely prevented from further preparation, he had best not attempt to enter the profession by the back door of the low-grade school, for his hope of a successful career following such a training will probably never be realized. Under these circumstances, it is to his own advantage to seek some other field of effort.

62. **Closing the Urinary Bladder.**—Lower has opened the bladder suprapubically 69 times for various causes, and has made an immediate closure in 35 and has employed drainage in 34. In the drainage cases the patients required from 3 to 4 weeks longer than the immediate closure cases, and generally had an annoying period of convalescence with dirty bladders which required irrigation afterwards. In the closure cases the patients averaged from 2 to 3 weeks for convalescence and generally were up and about in from 10 days to 2 weeks. The bladders were irrigated through the urethra from the start and by the time the patients were ready to leave the hospital, the infection (when present) had progressed well toward recovery. The technic employed is as follows: The bladder is thoroughly washed with a boracic solution and then filled with the same before the patient is anesthetized. Nothing is inserted into the rectum as is often done.

The patient is placed in the Trendelenburg position, a vertical or transverse incision is made, depending on whether or not there is much adipose tissue. After cutting through the sheath of the rectus and separating the muscle, the peritoneum is pushed out of the field and the bladder exposed extraperitoneally. A curved two-pronged tenaculum or bullet forceps catches the bladder on each side, the bladder is lifted and an incision made longitudinally between the two tenacula into the bladder. The tenacula are now removed and the edges of the bladder incision retracted with small smooth retractors (if greater retraction is needed), but at no time, and this is important, are the cut edges caught by a crushing forceps, e. g. like a hemostat. If this is done, it will be impossible to get a close approximation of the cut edges. When the wound is ready for closure, a round, half-curved needle threaded with 00 chromic catgut is used, never linen or silk. Stones almost invariably form if the ligature is nonabsorbable. The first suture is passed through the muscular coat down to the mucosa and a free end is left long for traction; a tenaculum is inserted at the other end of the opening and the cut stretched. The first row of sutures is then made parallel with the cut muscles, never through the mucosa, and is drawn only tightly enough to approximate nicely the cut edges. The next row of sutures is made transversely to the cut and penetrates all the layers of the bladder except the mucosa and is then tied to the free end of the first layer. By keeping the bladder on the stretch and placing the transverse sutures closely together, when the bladder contracts it makes the wound still more firm, but if sutured when the bladder is contracted, then, when the bladder becomes distended, the sutures will be stretched apart and there will be great danger of leakage.

63. **Abnormal Femora.**—These bones were taken from a tall, thin, male adult who had apparently died of tuberculosis. There are no abnormalities in the other bones, with the exception that the upper thirds of both tibiæ are rather thicker in the transverse diameter and the curves in the bone were somewhat greater than is normal. The femora are perfectly symmetrical; the surface of the bones is smooth and there is no evidence of periosteal or osteal inflammation; the articular extremities show no evidence of disease. At about the middle of the shaft, each femur begins gradually to flatten anteroposteriorly and the transverse diameter increases till the condyles are reached, thus differing markedly from the more rounded form of the normal femur. A transverse section of the bone would therefore present a transversely oval form. Hamann says that these bones do not correspond in shape or appearance to any of the pathologic modifications of the femur that have been described, indeed as stated above there is no evidence of any inflammatory or hyperplastic process. The density of the bone seems normal, no section has been made to show the interior however.

64. **Varicose Ulcer of Leg.**—The non-surgical treatment of the disease alone is discussed by Coplan. The general treatment employed by him consists in attention to the bowels, building up the general system; removing the cause, if possible, and regulating the habits and diet. Rest for the limb is essential. An elastic stocking should be ordered at once and the patient made to wear it whenever he is on his feet. The treatment of the ulcer itself consists in thorough antisepsis of the wound and surrounding skin, procured by first washing the entire leg with soap and water and then with 1-1000 bichlorid solution, or a saturated solution of boric acid; brushing the ulcer with carbolic acid, then covering it with cotton dipped in alcohol, drying it carefully and dusting on rather thickly bismuth subnitrate and starch powder, in equal amounts; a dressing consisting of a small pad is applied and held by a gauze bandage or by small strips of adhesive plaster. The elastic stocking is then put on. The powder is changed every morning by the patient, the wound is washed once every two or three days as stated above, inspected, and, if necessary, the carbolic acid and alcohol application is again made and the powder reapplied. The indications for the carbolic acid and alcohol applications are when the retrograde changes equal the reparative, or when the former exceed the latter. When the surface of the ulcer is covered with a layer of healthy granulation tissue composed of round cells closely packed together and supplied with a rich capillary network of blood vessels, the above treatment is all that is necessary. If the granulations are irregular, protruding above the edges of the wound, with ill-smelling purulent or seropurulent discharges, the surfaces should be curetted thoroughly before the above applications are made.

Southern California Practitioner, Los Angeles

September

65 Nature and Treatment of Hysteria. C. L. Allen, Los Angeles.
66 Care of the Ears of Infants and Children. W. H. Dudley, Los Angeles.
67 A Year's Work at the Eye Hospital of the United States Indian School at Phoenix, Ariz. A. Martin, Phoenix.
68 Open or Surgical Treatment of Fractures. C. P. Thomas, Spokane, Wash.

University of Pennsylvania Medical Bulletin, Philadelphia

September

69 The Patience of Surgery. A. P. C. Ashhurst, Philadelphia.
70 Sciatica as Caused by "Rheumatic" Myositis in the Gluteal Region. N. S. Yawger, Philadelphia.
71 Serous Meningitis. S. Leopold, Philadelphia.
72 The Medical Side of Benjamin Franklin. W. Pepper, Philadelphia.

Long Island Medical Journal, Brooklyn

September

73 Fakes and Fakirs in Medicine. M. B. Heyman, Central Islip, L. I.
74 Sanitary Investigation of Oyster Production and Distribution. H. D. Pease, Manhattan, N. Y.
75 Wassermann Reaction for Syphilis. J. I. Wiseman, Kings Park, New York.
76 Plea for the Prevention of Adenoids. J. E. Sheppard, Brooklyn.
77 Epigastric Incisions in Dealing with Cancer of the Breast. L. S. Pilcher, Brooklyn.

Journal of the Oklahoma State Medical Association, Muskogee

September

78 Diagnosis and Treatment of Diabetes. H. E. Breese, Henryetta, Okla.
79 Diseases of the Respiratory Tract. W. M. Sanger, Oklahoma City, Okla.
80 Prevention of Disease. T. F. Renfrow, Billings, Okla.
81 Etiology and Treatment of Inguinal Hernia. W. J. Frick and R. D. Irland, Kansas City, Mo.
82 What the Woman's Club Can Do in the Campaign Against Tuberculosis. J. M. Bryum, Shawnee, Okla.

American Journal of Physiology, Boston

September

83 *Influence of the Removal of Fragments of the Gastro-Intestinal Tract on the Character of Nitrogen Metabolism. III. Excision of the Stomach. A. Carrel, G. M. Meyer and P. A. Levene, New York.
84 Pharmacologic Action of Uranium. D. E. Jackson, Indianapolis.
85 Fate of Saccharose After Parenteral Introduction in Animals. L. B. Mendel and I. S. Kleiner, New Haven, Conn.
86 Concentration of Ammonia in the Blood of Dogs and Cats Necessary to Produce Ammonia Tetany. C. Jacobson, Chicago.
87 *Healing of Wounds in Denervated Skin Areas and Its Bearing on the Theory of Trophic Nerves. C. Jacobson, Chicago.
88 Separation and Estimation of Aspartic and Glutaminic Acids. T. B. Osborne and L. M. Liddle, Washington, D. C.
89 Congenital Thyroidism: An Experimental Study of the Thyroid in Relation to Other Organs of Internal Secretion. R. C. Hoskins, Boston, Mass.
90 *Prophylactic Action of Atropin in Immediate Anaphylaxis of Guinea-Pigs. J. Auer, New York.

83. **Excision of the Stomach.**—A previous communication by Levin, Manson, and Levene on the nitrogen metabolism after gastro-enterostomy, showed that when stomach digestion was lacking, the power of the animals to retain and to assimilate the nitrogen of the food was diminished. In the present experiments, Carrel, Meyer, and Levene have attempted to determine the effect of complete excision of the stomach. In one animal they found a high nitrogen retention in experiments performed early after the operation, but no retention in the experiments performed after the tenth week following the operation. They suggest that in this case not only the gastric secretion was missing but also the pancreatic and intestinal secretions were much reduced and at that period thhe absorbed protein had the character of parenterally introduced protein, i. e., it had undergone only very slight changes by digestion and hence was retained. They think that at the later period the pancreatic and intestinal digestions were restored to their normal power and that the characteristic effect of failure of stomach digestion was exhibited. In the second animal the stomach was completely removed and the experiments were begun on the twelfth week after the operation. Three experiments were performed on the animal and no nitrogen retention was noted in any of them. The necropsy revealed a hypertrophy of the upper end of the duodenum developing after the operation.

87. **Healing of Wounds in Denervated Skin Areas.**—Jacobson operated by cutting first the sensory nerve roots in pigeons and then noting the rate of healing of wounds made in the anesthetic area. Later the motor nerve roots were cut and similar observations made. The author sums up her results in the following conclusions: 1. the results of the experiments reported indicate no diminution in the rate of healing of wounds in a denervated (sensory or sensory and motor) skin area as compared directly with that in a normal area. 2. The variations in the results obtained by different investigators may be explained on the grounds of individual variation among animals. 3. It seems that so-called trophic disturbances may be due to vasomotor changes with increased susceptibility to infection or to the loss of protective reflexes from loss of sensibility to injurious agents.

90. **Prophylactic Action of Atropin.**—Auer finds that a prophylactic injection of atropin sulphate in guinea-pigs sensitized by the subcutaneous injection of horse serum saved 18 out of 25 from the lethal effect of the toxic injection; while out of 24 adequate controls only 6 survived. Stated otherwise: the death-rate with atropin was 28 per cent.; without atropin it was 75 per cent. These figures, Auer says, show the distinct therapeutic utility of atropin in immediate anaphylaxis.

Journal of the Indiana State Medical Association, Fort Wayne

September 15

91 Dermatitis Pediculoides Ventricosus. H. A. Ray, Grabill, Ind.
92 *Applying Thiersch Grafts to the Orbital Cavity. F. A. Morrison, Indianapolis.

92. **Applying Thiersch Grafts to the Orbital Cavity.**—Over the part to be covered, whether within or without the orbit, is laid a piece of sterile gutta-percha tissue and an exact pattern made of this surface by the use of small scissors. This pattern is now removed and laid aside for further use. Next a piece of gutta-percha tissue two or three inches square (for convenience of handling) is laid in a bowl of normal salt solution. The Thiersch graft is cut in the usual way but is allowed to remain on the razor blade and is transferred directly to the gutta-percha tissue. To effect this the tissue is removed from the salt solution and spread evenly on a sterile towel. The upper surface of this tissue must be kept quite moist to facilitate the even application of the graft. The razor blade carrying the graft is dipped gently into the normal salt solution to loosen the adhesion between them preparatory to the next step. The graft is

then applied, raw surface up, to the tissue by holding the edge with a small spatula and gradually drawing the razor backward and dislodging it. The spatula is now brought into play and all wrinkles carefully smoothed. Should any difficulty be experienced a few drops of water sufficient to float the graft may be dropped on its surface.

The gutta-percha tissue should then be lifted slowly by taking hold of one end and the excess of water on its surface allowed to drain away slowly. This will cause the graft to become intimately adherent to the surface of the tissue and permit handling without any fear of wrinkling or dislodgment. With a pair of small and sharp scissors the tissue and the adherent graft are cut at the same time to correspond to the size and shape of the pattern previously described. In case great accuracy is demanded the pattern may be placed beneath the tissue while this shaping is proceeding. The graft thus shaped, together with its companion piece of gutta-percha, is then placed face downward on the surface to be covered and pressed into place with the spatula or any convenient instrument. Here the two may be left in contact or if desired the tissue may be removed by gently insinuating the edge of a spatula.

Bulletin of the Johns Hopkins Hospital, Baltimore

October

93 The Life and Work of Lister. C. G. W. Judd, Baltimore, Md.
94 Decussation of the Pyramids—An Historical Inquiry. H. M. Thomas, Baltimore.
95 An Historical Sketch of Blood-Letting. J. T. Smith, Baltimore.
96 *Importance of a Thorough Teaching of Infectious Diseases of Childhood in the Medical Curriculum. C. F. von Pirquet, Baltimore.

96. Abstracted in THE JOURNAL, May 21, 1910, p. 1719.

Pennsylvania Medical Journal, Athens

September

97 Diagnosis and Surgical Treatment of Gall-Bladder Diseases. D. Guthrie, Sayre, Pa.
98 Is Induced Abortion Justifiable? If so, When? From the Religious View. A. R. Steck, York, Pa.
99 Is Induced Abortion Justifiable? If so, When? From the Legal View. G. H. Kain, York, Pa.
100 The Rights of the Unborn Child. W. S. Carroll, Erie, Pa.
101 Hypertrophy of the Adenoid and Other Tonsillar Glands as a Factor in Arresting Development of the Teeth and Alveolar Processes. S. M. Weeks, Philadelphia.
102 Relation of the Society Secretary to the Increase of Membership. L. B. Kline, Catawissa, Pa.
103 Value of the Secretary to the County Society. P. P. Breneman, Lancaster, Pa.
104 Relation of the County Secretary to the Business of the State Society. W. R. Davies, Scranton, Pa.
105 Ethics and Business in Medicine. R. W. Bailey, Germantown, Pa.
106 The Problem of Gonorrheal Infection. R. T. Barnett, Lewistown, Pa.
107 Anesthetics: A Report of One Thousand Cases. F. Schill, Johnstown, Pa.
108 The Nostrum Cure. J. C. Jenkins, Lititz, Pa.

Gulf States Journal of Medicine and Surgery, and Journal of the Southern Medical Association, Mobile

September

109 Impress of English Thought on Medicine. F. A. Jones, Memphis, Tenn.
110 Serodiagnosis of Syphilis. A. Litterer, Nashville, Tenn.
111 *Rare Case of Appendicitis. H. T. Inge, Mobile, Ala.
112 Clinical Observations on Hemoglobinuric Fevers. W. H. Deaderick, Helena, Ark.
113 Pathology of Hemoglobinuric Fever. G. H. Whipple, Baltimore.
114 Digestive Physiology and Some of Its Clinical Bearings. J. T. Halsey, New Orleans, La.
115 Whooping-Cough. C. Thorington, Montgomery, Ala.
116 The Owen Bill for the Establishment of a Federal Department of Health, and Its Opponents. S. A. Knopf, New York City.

111. **A Rare Case of Appendicitis.**—This is a case of appendicocecal intussusception. The appendix was found to contain literally thousands of small round bodies that varied in size from a small shot to that of an English pea. They were detached one from another and from the inner appendix walls. They exhibited a pearly luster, were quite firm, opaque and elastic.

West Virginia Medical Journal, Wheeling

October

117 The Owen Bill and Its Opponents. S. A. Knopf, New York.
118 Uncinariasis. J. E. Burns, Wheeling.
119 Alcohol Only a Narcotic Poison. G. H. Benton, Chester.
120 Spina Bifida and Congenital Tumor of the Sacrolumbar Region. J. Schwinn, Wheeling.
121 Early Diagnosis of Incipient Tuberculosis. J. L. Pyle, Chester.
122 Uses of Glycerin in Medicine. G. D. Lind, Greenwood.
123 Appendicitis as a Complication of Pregnancy. S. D. Hatfield, Iaeger.

Archives of Pediatrics, New York

September

124 *Clinical Features of Epidemic Poliomyelitis. L. E. Holt, New York.
125 *Chronic Rheumatoid Arthritis of Childhood. H. Koplik, New York.
126 *Bacterial Vaccines in Children's Diseases. J. Howland and B. R. Hoobler, New York.
127 Rôle of the Visiting Nurse in the Reduction of Infant Mortality. C. Herrman, New York.
128 *Cytodiagnosis of Tuberculous Meningitis. C. H. Dunn, Boston.

124. Abstracted in THE JOURNAL, June 4, 1910, p. 1889.

125. **Chronic Rheumatoid Arthritis.**—Koplik thinks that in children what has been described as arthritis deformans so closely resembles another form, the so-called Still's form of rheumatoid arthritis, that they both are probably the same form of disease and are peculiar to children alone. He has been led to this conclusion by a study of a number of these cases of rheumatoid affection of the joints. Six such cases are reported.

126. Abstracted in THE JOURNAL, June 11, p. 1996.

128. Abstracted in THE JOURNAL, June 4, p. 1889.

Journal of Advanced Therapeutics, New York

September

129 Static Treatment of Rheumatoid Arthritis. W. D. McFee, Haverhill, Mass.
130 Radiant Light in Treatment of Rheumatoid Arthritis. S. Abbott Franklin Mass.
131 Heat in Treatment of Rheumatoid Arthritis. G. Z. Goodell, Salem, Mass.
132 Roentgen-Ray Treatment of Rheumatoid Arthritis. F. B. Granger, Boston.
133 Treatment of Rheumatoid Arthritis. C. J. Walsh, Cambridge, Mass.
134 Dietetics in Rheumatoid Arthritis. W. H. Hitchcock, Boston.
135 Rheumatoid Arthritis Treated by Manual Therapy. E. C. Thompson, Roslindale.
136 Case of Chronic Congestion of the Prostate. H. F. Pitcher, Haverhill, Mass.
137 Effects of Electric Currents on Blood Pressure. E. Sayer, England.

American Journal of Public Hygiene

August

138 *Improvement of Public Health Through Teaching of Hygiene in the Elementary Schools. I. F. Hyams, Boston.
139 *Teaching of Hygiene and Sanitation in the Schools. J. W. Ritchie, Williamsburg, Va.
140 *Teaching of Hygiene in Normal Schools. A. de Garay, Mexico City, Mexico.
141 Organization of the Public School Hygiene Service in the Federal District of Mexico. A. Pruneda, Mexico City, Mexico.
142 Instructive Inspection. E. H. Richards, Boston.
143 Value and Scope of Exhibitions and Museums. A. M. Wilson, Boston.
144 Sanitary Education in California by Means of Traveling Railroad Exhibit. H. O. Jenkins.
145 *Scope and Nature of Publicity as a Factor in Popular Educational Movements in Public Health. J. A. Kingsbury, New York.
146 *Necessity of Efficient Means of Checking Syphilitic and Gonorrheal Contamination. J. Breza, Zacaracas, Mexico.
147 *Necessity of Isolating Prostitutes Who Suffer from Syphilis. J. Huici, Mexico City, Mexico.
148 *Vaccinal Syphilis. F. Bernaldez, Mexico City, Mexico.
149 *Second Decennial Revision of the International Classification of Causes of Death. C. Wilbur, Washington, D. C.
150 *Cooperative Efforts in the Supervision and Control of Milk Supplies. F. D. Bell, New York.
151 *How an Enlarged and More Uniform National Health Administration May Be Secured. J. Y. Porter, Key West, Fla.
152 *Maritime Prophylaxis of Pulmonary Tuberculosis. A. Matienzo, Tampico, Mexico.
153 *Prophylactic Measures in Exanthematic Typhus. G. Escalona, Mexico City, Mexico.
154 Relations Between the Sanitary and Politico-Administrative Authorities in the Mexican Republic. D. Orvananos, Mexico City, Mexico.
155 *Facts Indicating that Malaria May Be Spread Through Other Agencies Than the Anopheles Mosquito. J. Chico, Guanajuato, Mexico.
156 *Investigation of the Extent of the Bacterial Pollution of the Atmosphere by Mouth-Spray. C. E. A. Winslow and E. A. Robinson, Boston.
157 Sanitary Education of the People. G. T. Swarts, Providence, R. I.
158 Utilization of Bacteriologic and Microscopic Methods in Inspection of Milk. J. O. Jordon, Boston.
159 Organization of Municipal Health Department at Vera Cruz. M. S. Inglesias, Vera Cruz, Mexico.
160 *What May Be Done to Improve the Hygiene of the City Dweller. S. A. Knopf, New York.
161 Police Health Census of the City of Baltimore, 1906. C. H. Jones, Baltimore.
162 Studies on Inhibition, Attenuation and Rejuvenation of *B. Coli*. F. E. Hale and T. W. Mella, Boston.

163 Microscopic Investigation of Hematozoon Malariæ. O. Gonzalez-Fabela, Mexico City, Mexico.
164 Bacteriologic Methods for Air Analysis. J. Weinziri and M. V. Fos, Seattle, Wash.
165 Pancreatin-Bile Salt Medium for Detection of *B. Coli* in Water. L. R. Swain, Mount Kisco, N. Y.
166 Longevity of *B. Diphtheriæ* on Swabs. F. H. Slack, B. L. Arms and E. M. Wade, Boston.
167 A Standard Fumigating Outfit for a Single Room. A. W. Freeman, Richmond, Va.
168 Importance of Standard Methods for Testing Disinfectants. W. Dreyfus, New York.
169 An Analytic and Epidemiologic Study of Farm Water Supplies. K. F. Kellerman, Washington, D. C., and H. A. Whittaker, Minneapolis, Minn.
170 Control of Algal Pollution in the Reservoirs of the Canal Zone. K. F. Kellerman, Washington, D. C., and J. O. Meadows, Oconomowoc, Wis.
171 Artificial Milk: A Substitute for Ordinary Milk as a Laboratory Medium. H. W. Hill, Minneapolis.
172 Importance of Contact Infection. C. V. Chapin, Boston.
173 Modern Methods of Quarantine. M. J. Rosenau, Boston.
174 Personal Hygiene. P. G. Stiles, Boston.
175 Veterinary Hygiene. W. L. Beebe, St. Cloud, Minn.
176 Sanitary Engineering Notes. R. S. Weston, Boston.
177 Biologic Laboratory Notes. F. P. Gorham, Boston.

138, 139, 140, 145 to 148, and 150 to 153. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1843 to 1846.

149. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1761.

155. **Spread of Malaria Through Other Agencies Than the Anopheles Mosquito.**—Chica claims that in Guanajuato popular opinion uniformly accuses the fruits of being the cause of malaria in its worst aspect and people who go to Tierra Caliente ("Warm Land") as the coast is colloquially called among them, assert that if they keep clear of fruits and add brandy to the water they may remain free of malaria. Up to this time the search for malaria germs in fruits has yielded but negative results; but he thinks one thing remains: the anopheles is not the only vehicle for the spread of malarial diseases.

156, 160. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1844 and 1845.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 17

1 *Spinal Analgesia by the Stovain-Strychnin Method of Jonnesco. L. McGavin.
2 Anesthetizing Patients for Operations on the Throat, Nose and Accessory Sinuses. S. V. Stock.
3 State Insurance and the Poor-Law Commission. J. H. Keay.
4 State Invalidity and Sick Insurance. E. R. Fothergill.

1. **Spinal Analgesia.**—McGavin tried this method in eighteen cases with almost uniformly disappointing results. He says that four successful cases of high puncture serve, so far as analgesia above the phrenics is concerned, to show that the method has at least some element of possibility in it; it is, however, uncertain, imperfect at present, and of doubtful value in replacing general anesthesia. The unsuccessful cases of high puncture show it to be fraught with danger, and from the human standpoint unjustifiable. The cases of low puncture serve to show very little else than that strychnin can be injected into the spinal canal without inducing spastic symptoms, and that it undoubtedly results in a shortening of the period of analgesia usually resulting from the use of stovain alone. The effects of the analgesic on the cranial nerves appear to be irregular. So far as McGavin has been able to see, the first, second, third and fourth remain unaffected; the fifth is at times under control, as is also the seventh; the sixth, eighth, ninth, tenth and twelfth are unaffected, while the eleventh may or may not be paralyzed. He can see no object in adding strychnin in cases of low spinal analgesia, since he has found no difficulty in carrying out operations under stovain analgesia without it, even when such analgesia has been pushed to the level of the clavicles.

Lancet, London

September 17

5 Vaccine Therapy: Administration, Value and Limitations. A. E. Wright.
6 *Chondrocarcinoma of the Testicle. W. Sheen, H. A. Scholberg and R. L. M. Wallis.
7 Enucleation of Tonsils with the Guillotine. S. S. Whillis and F. C. Pybus.
8 *Verminous Appendicitis. H. A. Lediard.
9 Toxicology of Carbon Monoxid. W. J. Wilson.
10 Ventilation of Ships, Particularly Merchant Ships. W. E. Home.

6. **Chondrocarcinoma of the Testicle.**—Wallis' patient was a man, aged 30, with a strong tuberculous family history, three sisters and one brother having died from phthisis between the ages of 19 and 30. The patient was struck by a hockey stick on the left testicle in February, 1908. He had pain, stopped playing for two minutes, then finished the game. Swelling of the testicle appeared at once and gradually grew larger, and he wore a suspensory bandage; he had no pain and did not lose flesh. In February, 1909, the left scrotum contained a smooth, ovoidal mass, roughly as big as the adult fist, hard, uniform, elastic, not tender and not translucent. Veins were not dilated, testicular sensation was retained at the upper and front part of the swelling, and there was no thickening of the cord. Rectal examination showed nothing abnormal. The testicle and cord were removed through an inguinal incision, the inguinal canal being opened to its outer end. The cord was apparently normal. The patient left the hospital in 14 days with the wound soundly healed. Four months later he noticed an abdominal swelling, hard, elastic, smooth, prominent, slightly tender, reaching from the umbilicus to the symphysis, and from the left anterior superior spine to three inches to the right of the middle line. Slight frequency of micturition was present. There was a slight yellow tinge on the cheeks. The patient died two months later. The tumor was an embryoma in which the hypoblastic layer had undergone a malignant change giving a spheroidal-celled carcinoma.

8. **Verminous Appendicitis.**—A girl, aged 7, complained of abdominal pain and distention, fever, vomiting and tenderness in the appendix region. The appendix region was more tender, and persistently tender, than any other part of the abdomen, but the pain was diffused over the abdomen and the distention was suggestive of general peritoneal infection. The child was submitted to operation. The cecum was found to be inflamed, but no lymph was present. The appendix, when brought to the surface, was swollen and redder than normal. It was not until the appendix was slit up that a nest of actively moving threadworms was seen, some of which escaped. They were the oxyuris vermicularis. After the operation the usual remedies were given, and a careful search was maintained for a week or more, but no sign of a worm was visible in the motions, which were washed, strained and examined with a lens. Films of blood taken showed a marked polymorphonuclear leukocytosis, but the eosinophil cells were not increased in number, being rather fewer than usual.

Journal of Tropical Medicine and Hygiene, London

September 15

11 The Investigation of Pellagra. L. W. Sambon.

Australasian Medical Gazette, Sydney

August

12 Trachoma in Western Queensland. E. T. Smith.
13 Family Syphilis. R. H. Marten.
14 *Syphilis of the Central Nervous System. C. T. Champion de Crespigny.
15 Exclusion of Tuberculosis in Diagnosis. F. C. Griffiths.
16 *Hysterectomy and Appendectomy in a Patient Twelve Years Old. W. Hoare.
17 Suggestions for Better Organization of the Profession. F. W. Harlin.
18 Value of Pituitary Extract. E. J. R. Holder.
19 Typhoid Bacillus-Carrier Detected in Connection with an Epidemic of Typhoid Fever. C. S. Willis.

14. **Syphilis of the Central Nervous System.**—DeCrespigny examined the cerebrospinal fluid of 50 patients suffering from various forms of nervous disease, by means of the Ross and Jones reaction. The results of the investigation are as follows:

(A) The reaction was positive in the following cases: (a) Parasyphilis: general paralysis, 6; tabes, 8. (b) Tertiary syphilis: cerebral syphilis, 5; syphilitic paraplegia, 1. (c) Probable cerebral syphilis, 2. (d) Non-syphilitic: tuberculous meningitis, 1; secondary carcinoma in vertebræ, 1; lead encephalitis, 1.
(B) The reaction was negative in the following: (a) Probable cerebral syphilis, 2. (b) Non-syphilitic: insanity, 4; vascular cere-

bral lesions, 4; traumatic concussion, 1; neurasthenia, 1; uremic hemiplegia without vascular lesion (verified at autopsy), 1; delirium due to pyemia, 1; idiopathic epilepsy, 2; paralysis agitans, 1; Ménière's syndrome, 1; hydrocephalus, 1; disseminated sclerosis, 2; idiopathic spastic paraplegia, 1; pernicious anemia with combined degeneration, 1; transverse myelitis (unknown cause), 1; syringomyelia, 1; plumbic peripheral neuritis, 1. DeCrespigny regards the test as being of considerable help in the diagnosis of obscure nervous affections.

He concludes: 1. Absence of reaction negatives the existence of general paralysis or tabes. 2. Its presence usually means syphilis of the central nervous system in the absence of tuberculous meningitis or malignancy. 3. Deeply situated cerebral syphilis does not necessarily produce the reaction. 4. Tuberculous meningitis may give the reaction even with a clear fluid. 5. The simplest explanation of the test seems to be as follows: Rapid degeneration of cells in the neighborhood of the cerebrospinal space sets free in the fluid a substance of the globulin class. In the absence of acute inflammation, syphilis, tubercle and cancer are the conditions most likely to cause this degeneration, and consequently to give rise to the reaction.

16. **Hysterectomy and Appendectomy.**—The patient, aged 11 years and 6 months, was abnormally developed. The mammæ were well-formed; pubic hair, external genitals and general contour were those of a young woman. Menstruation, though free at first, was apparently normal; there were no clots and absolutely no pain. A fortnight after the first period she again menstruated and the flow continued for a fortnight. Treatment proving ineffective, it finally became necessary to remove the uterus, sections of which showed typical fibromyoma structure.

Journal of Obstetrics and Gynecology of the British Empire, London

September

20 *Induction of Labor and Manual Dilatation of the Cervix Uteri. H. M. Little.
21 *Ovarian Pregnancy with Diffuse Intraperitoneal Hemorrhage. A. W. W. Lea.
22 Conservative Operations on the Internal Female Genital Organs. E. B. M. Haarbleicher.

20. **Induction of Labor.**—Little says that the necessity for emergency measures in obstetrics varies inversely with the care given to the patient during pregnancy. Timely induction of labor will prevent many mishaps incident to the progress of most of the usual or unusual complications of pregnancy. Such induction is best accomplished by the modification of Krause's method—the use of the large soft bougie introduced with the aid of the stylet. Pelvic contraction is not to be considered as an indication for induction of labor. Prolongation of pregnancy, on the other hand, is more frequently an indication for its employment. The passage of the bougie and the introduction of the pack will usually bring on pains within a few hours, and the labor may be allowed to proceed, or it may be terminated artificially. When the cervical canal is obliterated its dilatation by Harris' method is usually easy and, when carefully done, is safe. The danger from hemorrhage and infection is slight; laceration of the cervix will occur frequently, and such laceration should be immediately repaired. Apart from the fact that the method can be employed without assistance other than the anesthetist and nurse, its advantages are its universality of application, its simplicity, the limitation of the force employed to the fingers of one hand, and, finally, the ability of the hand to recognize and estimate the resistance to be overcome.

21. **Ovarian Pregnancy.**—Lea reports a case of early rupture of an ovarian pregnancy causing symptoms of diffuse intraperitoneal hemorrhage.

Dublin Journal of Medical Science

September

23 Therapeutic Qualities of Calcium Permanganate. G. A. Stephens.
24 Mouth-Breathing. M. A. Diemont.
25 Present Position of Tuberculin Therapy. W. Leggett.

Australian Medical Journal, Melbourne

August

26 Study of Monotremes and Marsupials to Determine Changes in the Structure of the Cecum and Its Vermiform Appendix. W. Stapley and W. MacKenzie.
27 Surgical Aspects of Dyspepsia. G. A. Syme.
28 *Medical Treatment of Cholelithiasis. A. V. M. Anderson.
29 *Medical Treatment of Pyloric Obstruction. J. F. Wilkinson.
30 Surgery of Gastric Ulcer. D. Shields.
31 "Indigestion" from a Surgical Standpoint. J. T. Mitchell.
32 Quinsy. T. K. Hamilton.
33 Fatal Cases of Hematemesis. W. E. Wilson.
34 Problems of the Milk Supply. S. S. Argyle.
35 *Abnormal Ribs as a Cause of Lumbar Pain. S. S. Argyle.

28. **Medical Treatment of Cholelithiasis.**—Anderson recommends the use of hexamethylenamin together with the other dietetic and hygienic measures in early cases of cholelithiasis, or in cases where the indications for operation are not urgent. If operation has to follow, the antiseptic action of the drug on the bile may be helpful in preventing septic complications.

29. **Treatment of Pyloric Obstruction.**—Wilkinson tries to show that, after all, surgical treatment of these patients has not yet been of a sufficiently satisfactory character to displace the older, carefully considered and adopted medical means.

35. **Abnormal Ribs as a Cause of Lumbar Pain.**—The patient, a man aged 45, complained of pain in the left renal region for some years. He was an amateur swimmer, and frequently noticed that after a swim the pain in the back was worse. There was no history of hematuria, albuminuria or pyuria. An examination of other negatives revealed to Argyle the presence of abnormal ribs in 6 cases out of 143 radiographic examinations of the renal region. An examination of these plates showed that in some cases the extra rib exists on one side only, while on others there are lumbar ribs on both sides. In all cases, the transverse processes of the first lumbar vertebræ are rudimentary in character, or rather resemble those of the dorsal vertebræ.

Archives des Maladies de l'App. Digestif, Paris

August, IV, No. 8, pp. 433-496

36 Roentgen-Ray Examination of Gastric Ulcer. (Radioscopie des ulcères de l'estomac.) Cerni and Delaforge.
37 *Study of One Hundred and Four Cases of Cancer of the Esophagus and Cardia. L. Lamy.

37. **Cancer of the Esophagus and Cardia.**—In 78 of the 104 cases of cancer of the esophagus reported, progressive difficulty in swallowing was the first sign of trouble. There was no pain in 61 cases, but in 5 cases pain preceded the dysphagia by a few days and in 11 cases they came on together. In 29 cases there was no pain until a month or two after the difficulty in swallowing had developed. In 19 of the 40 cases with pain it occurred only while food was being swallowed; in the others it was continuous. Regurgitation was the rule; it was absent in only 17 of the total 104 cases. The appetite remained good in 70 per cent. and there was distaste for meat in only 4 cases. The cancer proved fatal in most cases between 6 and 12 months, but in a few, in from 2 to 4 months. In 7 cases the inability to swallow the food came on suddenly, the patients being apparently in perfect health; one was a man of 32. In 2 of these cases intense pain accompanied the sudden dysphagia, which in 1 case was accompanied by profuse salivation. In 8 cases the sudden difficulty in swallowing proved permanent and no solid food could be swallowed thereafter; in 2 other cases neither solids nor fluids could be swallowed. Cancer is differentiated from spasm of the esophagus by the rapid sequence of the disturbances, gastrostomy becoming necessary in from 1 to 4 months, while spasm of the esophagus may persist for years without requiring this. Copious salivation and mucous vomiting are aids in diagnosing. In one case a woman of 28 had an evident spasm of the esophagus but its persistence, notwithstanding great fluctuations, indicated an underlying organic lesion, confirmed by direct visual inspection and death 5 months after the first symptoms. In 6 cases the cancer did not prove fatal for from 1 to 2½ years. Twelve of the patients developed tuberculosis. The report issues from Mathieu's service at Paris.

Archives des Maladies du Cœur, etc., Paris

September, III, No. 8, pp. 529-576

38 Pathologic Changes in the Ganglion Cells of the Heart. L. Stiénon.
39 Aneurysm at the Base of the Left Ventricle Coinciding with Subacute Parietal Endocarditis. J. Bret and C. Roubier.

Archives de Médecine des Enfants, Paris

September, XIII, No. 9, pp. 641-720

40 *Malaria in Children. J. P. Cardamatis.
41 Bacteriology of Noma. M. Breuer.
42 *Fatigue as Cause of Nocturnal Enuresis in Children. N. B. Nicoletopoulos.
43 Multiple Exostoses in Three Children. Le Pontois.
44 *Tenia Nana* in Children. J. Comby.

40. **Malaria in Children.**—A somewhat similar article by Cardamatis was abstracted in THE JOURNAL, Oct. 9, 1909, p. 1225. His further experience confirms the assumption that young children are immune to malaria, and that the parasites are unable to traverse the placenta. In 20 cases in which the mother's blood swarmed with them none was in the infant's blood. It seems evident that there is some antitoxic substance on the fetal side of the placenta which not only kills the hematozoa arriving from the maternal blood but confers immunity on the infant for a year or two. In 838 children with malaria, only 87 were under 2; the tertian form of malaria predominates among children as among adults in Greece, but all forms are encountered at various ages. In 1,287 cases fully 75 per cent. were of the chronic form. The spleen is not always much enlarged in the children, even with grave cachexia.

42. **Fatigue as Factor in Nocturnal Enuresis.**—In a number of cases encountered by Nicoletopoulos the enuresis was evidently the result of sleep so profound by the exhausted children that the desire to urinate did not awake them as under ordinary conditions. In the cases reported, a little care on the part of the parents and children to prevent over-fatigue speedily cured the tendency to enuresis.

Lyon Médical, Lyons

August 28, CXV, No. 35, pp. 317-356

45 Tuberculous Cavities in a Three-Months'-Old Infant. Collet and Delachanal.

September 4, No. 36, pp. 357-396

46 The Individual School Sanitary Record Book for the School Children at Lyons. (Le carnet sanitaire individuel.) C. Lesieur.

Presse Médicale, Paris

September 3, XVIII, No. 71, pp. 665-672

47 Protracted Subacute Cerebrospinal Meningitis. (La méningite cérébrospinale prolongée à forme cachectisante.) R. Debré.

Semaine Médicale, Paris

September 7, XXX, No. 36, pp. 421-432

48 Evolution of Medicine from 1830 to 1870. R. Lépine.
49 *Cardiolysis in Treatment of Adhesive Pericarditis. J. L. Roux-Berger.

September 14, No. 37, pp. 433-444

50 *General Peritonitis from Unknown Cause. (Péritonites cryptogéniques.) R. De Bovis.

49. **Operative Treatment of Adhesive Pericarditis.**—Roux-Berger reviews the history and applications of cardiolysis or precordial thoracectomy as it is better entitled, stating that there are records now of over 28 cases in which this operation has been done, besides 2 from his own experience. In 21 cases the results were favorable, the improvement being evident even during the course of the operation in some of the patients. In 7 cases the operation failed to benefit, and study of these cases shows that the intervention is applicable only in the cases of actual adhesive mediastino-pericarditis, and only when the symptoms observed depend on the adhesion of the heart to the chest wall. Unless the myocardium is in good condition there is little prospect of much relief from the operation. This can be estimated by the strength and regularity of the pulse and by the influence on the disturbances in the circulation of rest in bed, dieting and heart stimulants. The persistence unmodified of dyspnea, cyanosis and edema, notwithstanding vigorous medical treatment, should contraindicate the operation as proving that it has little chance for success. His review embraces European literature only.

50. **General Peritonitis from an Unknown Cause.**—De Bovis comments on the way in which the field of idiopathic peritonitis is being reduced by discovery of previously unsuspected causes for peritonitis. With the exception of a few still unexplained cases, such as Cuff's case of primary pneumococcus peritonitis, it seems evident that peritonitis is always secondary to some lesion elsewhere, but it may be preceded by a general infection—most often due to the pneumococcus or streptococcus—or it may be secondary to some abdominal lesion. In the case of general infection a laparotomy is of doubtful utility. In any event, it should be restricted to simple evacuation of the pus. When the peritonitis is secondary to some abdominal lesion its gravity depends on the character of the latter. If migration of germs from the stomach into the gastrohepatic omentum has led to glandular suppuration, as in Dahlgren's case, it is evident that the peritonitis may be threatening and an early laparotomy is usually indicated. But if, on the other hand, some mild enteritis seems to be the cause of the diffuse peritonitis and the latter seems moderate, expectant treatment may be justified; Lennander advocates this. In case there is severe paralysis of the bowel, enterotomy may be applied with multiple Witzel's fistulas or lavage of the intestine. Monks successfully applied the latter in a streptococcus peritonitis, flushing the intestinal canal with a salt solution through multiple enterotomy openings. De Bovis reviews in detail the recent literature on this so-called idiopathic peritonitis.

Berliner klinische Wochenschrift

August 29, XLVII, No. 35, pp. 1609-1648

51 Ehrlich's "606" in Syphilis. (Kritische Bemerkungen zur Ehrlich-Hata-Behandlung.) A. Blaschko.
52 Lipoid Substances in Blood and Urine in Tuberculosis. (Ueber den biologischen Nachweis lipoider Substanzen durch die Komplementbindungsmethode im Blut und Harn bei Tuberkulose und deren Bedeutung.) J. Citron and D. Klinkert.
53 Biology of Tubercle Bacilli. III. H. Aronson.
54 *Pathogenesis of Diarrhea in Exophthalmic Goiter and Diagnostic Importance of Ferment Content of Stools. R. Balint and B. Molnar.
55 Two Cases of Hypernephroma. (Zwei Tumoren aus Nebennierenmarkgewebe.) S. Suzuki.

September 5, No. 36, pp. 1649-1692

56 Stab Wound of Large Vessel. (2 Fälle von Stichverletzung grosser Gefässe.) S. Hadda.
57 Theory and Practice in Tuberculin Treatment. (Ueber die Beziehungen zwischen der Theorie der Tuberkulinwirkung und der Tuberkulintherapie.) A. Wolff-Eisner.
58 The Wassermann Reaction after Treatment of Syphilis with Ehrlich's "606." C. Lange.
59 Laboratory and Clinical Research on the Wassermann Reaction. J. A. Finkelstein and W. J. Dawydow.
60 Vaccine Therapy of Gonorrheal Complications. W. Friedländer and H. Reiter.
61 Present Status of Cesarean Section. (Zur Kaiserschnittfrage.) E. Runge.

54. **Diagnostic Importance of Ferments in the Feces.**—Balint and Molnar conclude from their study of the diarrhea in exophthalmic goiter that it was not due to insufficiency of the external secretion of the pancreas. On the contrary, this secretion seemed to be unusually copious. The stool resembled that with pancreatic insufficiency but the large ferment content contradicted this assumption. The phenomena observed suggest that there is an overproduction of a peristaltic hormon in exophthalmic goiter which would explain the azotorrhea and steatorrhea with abundance of ferments. It seems plausible that the excessive functioning of the thyroid is responsible for this, especially as obstinate constipation seems to be the rule with myxedema. Further research showed that tests for the diastase in the stool are useful in diagnosis of cancerous obstruction of the outlet to the pancreas. In conclusion, they urge further study of the physiologic secretion of the pancreas which may throw light on many dark points in the pathology of the pancreas. It is better for this purpose to take the total diastase for the 24 hours as the standard.

Deutsche medizinische Wochenschrift, Berlin

September 8, XXXVI, No. 36, pp. 1641-1688

62 Indications for Pubiotomy. (Die Berechtigung der Pubeotomie.) P. Kroemer.
63 *Toxemia of Pregnancy. (Schwangerschaftstoxämie.) J. Hofbauer.
64 *Bronze Diabetes. W. O. Ridder.
65 Slight Clinical Value of Pinoff's Levulose Reaction in the Urine. F. Fleischer and K. Takeda.
66 Suffocation Leukocytosis. (Zur Erstickungsleukozytose.) P. Fraenckel and Hochstetter.
67 *Tuberculin in Treatment of 682 Patients with Open Pulmonary Tuberculous Lesions. E. Löwenstein.
68 *Normal Skiagraphs of the Heart. ("Normalaufnahmen" des Herzens und ihre klinische Bedeutung.) W. Bloch.

69 *Influence of Momburg Belt Constriction on the Heart and Circulation. J. Tornai.
70 Sterilizing Action of Tooth Pastes. (Desinfizierende Wirkung einiger gebräuchlicher Zahnpasten.) R. Bassenge and E. Selander.
71 *Castor Oil Plant in Ancient Egypt. (Verwendung der Rizinuspflanze in der Medizin der alten Aegypter.) G. A. Wätzold.

63. **Pregnancy Toxemia.**—Hofbauer has been studying the toxicity of the placenta by anaphylaxis reactions; the results show that there does not seem to be any great biologic difference between the albumin of the mother, of the fetus and of the placenta. At the same time the development of the fetus and its membranes reacts on the maternal organism in such a way that severe auto-intoxication may result. This is evident in the degenerative processes in the kidney and liver, liable even with a normal pregnancy; also a hyperplastic process occurs in the glands with an internal secretion. Eclampsia and pernicious vomiting are the extreme manifestations of the toxemia of pregnancy on which histologic and biochemical research have thrown much light and now point the way to prophylaxis and treatment.

64. **Bronze Diabetes.**—Ridder had opportunity to observe the development of bronze diabetes in a man of 35, four years after pigmentation on the extremities and slight edema of the legs with some physical depression. A year later, signs of liver disease became apparent and it was diagnosed as hypertrophic cirrhosis of the liver with brownish pigmentation of the skin; there was no diabetes or intolerance of sugar. This condition persisted for nearly 2 years when typical bronze diabetes developed and the patient died in 4 months. Ridder ascribes the bronze diabetes to injury of the liver cells from some unknown cause. The pancreas measured 19 by 3 by 2 cm. and was bronze colored and of a tough consistency.

67. **Tuberculin Treatment in Open Pulmonary Tuberculosis.**—Löwenstein states that 989 patients have been given specific treatment at Beelitz since the beginning of 1908 and that 682 received the Koch tuberculin alone. The tubercle bacilli vanished from the sputum in 57.94 per cent. of the 409 patients treated with old tuberculin; in 42.05 of the 204 treated with new tuberculin and in 55.07 per cent. of the 69 treated with both combined. This specific treatment was restricted to patients free from complicating affections and the old tuberculin was given the preference when a tendency to production of connective tissue was apparent and in the cases with recent destructive processes, the aim being to help the organism in throwing off dead tissue and walling off the lesions by a vigorous local reaction. The expectoration was promoted by inhalations, etc., to help in throwing off the infectious material; the local reaction, he states, is one of the most important curative factors in the response to tuberculin under these conditions. The new tuberculin was given the preference when it was necessary to avoid much of a local reaction, especially with extensive destructive processes with much breaking down of tissue. The patients were about equally divided among the various stages of the disease.

68. **"Normal" Skiagraphs.**—Bloch accepts as progress the system of standard radioscopy with the tube exactly 70 cm. from the body, on the median line, for Roentgen examination of the heart. This does not give the actual size of the heart, but it supplies a standard which is much more instructive for purposes of comparison. The exact measurements are facilitated by an L square, one arm on the median line and an adjustable arm pivoting about the center of the horizontal arm to outline the outer margin of the side of the heart, a graduated circle at the base of the pivoting arm indicating the number of degrees in the angle thus formed. As the skiagraphs are always taken under the same conditions they can be superposed for estimation of the progress under treatment in each case and for comparison with normal findings.

69. **Influence of Momburg Belt Constriction on the Circulation.**—Tornai has applied the Momburg technic in 20 cases, merely to study the effect on the heart and circulation. The subjects were mostly young and with normal circulation and nervous system or with well-compensated heart defects. In every case the number of systoles and the blood-pressure were notably increased by the procedure. As the constricting belt was removed, the pulse grew weaker, in some cases becoming very weak and irregular. His experience suggests the necessity for careful examination of the functional capacity of the heart beforehand, testing it by the Katzenstein or other reliable method. Any suspicion of heart disease or arteriosclerosis, exophthalmic goiter, nephritis or plethora should contra-indicate the method. He tabulates the findings in one typical case as recorded at 10 intervals.

71. **The Castor-Oil Plant in Ancient Egypt.**—Wätzold gives some quotations from a recently published translation of the Berlin papyrus, showing the extensive use made of the ricinus in ancient Egyptian medicine. The crushed seeds seem to have been used for local application in headache and to cure baldness, and many references are to the purgative action of the oil. He adds that there are many of these ancient papyrus manuscripts awaiting translation in the Berlin museum, which are sure to contain much of interest to medical men. The one just published dates from fifteen centuries before Christ.

Jahrbuch für Kinderheilkunde, Berlin

September, LXXII, No. 3, pp. 243-372

72 *Suppuration in Infants' Urinary Tract. (Ueber die eitrigen Erkrankungen der Nieren und Harnwege im Säuglingsalter.) H. Thiemich.
73 Antibodies for Diphtheria Toxin in Human Serum. (Gehalt des menschlichen Serums an Schutzkörpern gegen Diphtherietoxin.) M. Karasawa and B. Schick.
74 The Ferments and the Absorption of Fat in Infants. (Fermentuntersuchungen und Fettresorption beim Säugling.) E. Hoffmann.
75 Congenital Stenosis of the Pylorus in Infants from Disturbances in Development of the Gastro-Intestinal Tract. F. Toporski.
76 *Study of the Heart Functioning in a Case of Extrathoracal Heart. (Untersuchungen über die Herzfunktion an einem Fall von Ectopia cordis congenita.) M. Pekar and E. Tezner.
77 The Nourishment for and Weight of Nursing Women. (Gewichtsbestimmungen während einer Stillperiode nebst Bemerkungen über Nährmittel für Stillende.) M. Weissbart.
78 Prognosis and Symptomatology of Inherited Syphilis in Infants. (Hereditäre Lues im Säuglingsalter.) L. Heine.

72. **Suppurative Processes in Kidneys and Urinary Passages in Infants.**—Thiemich has encountered a number of cases of suppuration in the urinary apparatus in young infants. The trouble was a pyelocystitis and generally of hematogenic origin. Pyelocystitis seems to be of a milder nature than pyelonephritis in infants; the latter, in his experience, occurred only in very ill infants with very low vitality. The urine does not accumulate in the infant's tiny kidney pelvis to such an extent as in adults, and the passage can be effectually flushed by artificially induced diuresis. But this, even with antiseptics, does not seem to influence materially a pyelonephritis as the urine does not flush the foci in the kidney tissue. As they do not tend to confluence but rather to spontaneous healing by absorption, not much benefit can be anticipated from surgical measures, especially in view of the difficulty in diagnosing multiple abscesses in the infant kidney and the depressed state of the child thus affected, even apart from its kidney trouble. Treatment therefore should be directed to the underlying cause. If this succeeds, and dietetic measures here are the main reliance, then the pyelonephritis may be likewise arrested and even heal. In one of his two cases of the kind the child succumbed to the progress of its dyspeptic disturbances which it proved impossible to check; necropsy showed well-advanced healing processes in the kidneys. In the other case the child was restored to health on breast milk and the urine findings showed the progress to a complete cure. The child's illness lasted for several months but seemed to be closely and exclusively connected with the kind and success of the dietetic measures, the influence of the urinary affection being scarcely perceptible. In several of his cases there seemed to be some connection between the exudative diathesis and the urinary disease. The possibility that the healed pyelonephritis or persisting latent bacteriuria may cause trouble in later life must not be forgotten; this may be the source of pyelitis in adults in some cases. His necropsy findings indicate that the kidney becomes infected by the creeping up of an infectious process in the urethra in girls, but in boys the infection is probably by way of the blood. He reports the details of 5 cases in male and 3 in female infants with 3 other cases

in female infants who had died from pneumonia and necropsy unexpectedly revealed a suppurative process in the kidneys—the multiple abscesses were as extensive in this latter group as in any of the others.

76. **Heart Functioning with Extrathoracal Heart.**—The heart was entirely outside of the body and presented a rare opportunity for study of the functioning of its various parts, the apex lying outside on the left hypogastrium. The third day after birth fibrinous pericarditis developed, proving fatal on the sixth day. The right auricle continued to beat rhythmically for 5 minutes and irregularly for 15 minutes longer after the death of the rest of the heart. The electrocardiograms and other findings are reported and discussed. Once during the first day of life the heart stopped beating in consequence of being accidentally hit, but resumed its regular action after 2 minutes of direct massage.

Medizinische Klinik, Berlin

September 11, VI, No. 37, pp. 1433-1470

79 Present Status of the Trachoma Question. K. Stargardt.
80 Recognition of Mental Weakness, especially in Recruits. (Zur Erkennung des Schwachsinns durch Truppe und Arzt.) Weyert.
81 Two Epidemics of Influenza in Infants. (Influenza bei Säuglingen.) S. Weiss.
82 *The Tuberculin Focal Reaction. (Zur Tuberkulin-Herdreaktion.) G. Wolfsohn.
83 Wassermann Reaction among the Inmates of Asylums for Feeble-Minded. (Verbreitung der Syphilis in den Schwachsinnigenanstalten Württembergs auf Grund von Blutuntersuchungen mittels der Wassermannschen Methode.) R. Kürner.
84 Indications for Interrupting Pregnancy on account of Tuberculosis. (Zur Unterbrechung der Schwangerschaft bei der Tuberkulose.) S. Kaminer.
85 Dispensing with Plate and Film in Skiagraphy. (Röntgenaufnahmen auf Bromsilberpapier.) W. Katz.
86 A Plea for Manual Massage. (Die unbewaffnete Hand des Arztes.) A. Bum.
87 *Responses to Question Blank Sent to Physicians Using Ehrlich's "606" in Syphilis. (Umfrage über die Wirkung des Ehrlichschen Arsenobenzols bei Syphilis.)
88 Tubercle Bacilli in Cutaneous Lesions. (Ueber Tuberkelbazillennachweis bei Hauterkrankungen.) W. Lier.

82. The **Tuberculin Focal Reaction.**—Wolfsohn regards as the greatest advance in tuberculin treatment the recent tendency to avoid any reaction, either local or general, but he thinks that much further progress may be realized if internists and surgeons will work together in cases of surgical tuberculosis under tuberculin treatment. In the surgical affections, under direct inspection the focal reaction to the tuberculin may afford most instructive information which will apply to the lungs. As a typical instance he reports the case of a woman of 34 with multiple tuberculous abscesses in the left breast and the scar of a tuberculous hip-joint affection which had healed 22 years before. The abscesses were evacuated and a course of tuberculin instituted under which the breast process rapidly healed, but the old hip-joint process flared up again. He regards the breaking out anew of the old coxitis as a specific focal reaction to the tuberculin in the strictest sense of the term. The tuberculin had been given in minutest doses for two months and was suspended at the first signs of redness in the old hip scar. The case shows that a clinically latent focus may respond to tuberculin and may progress even on suspension of the tuberculin. Such an occurrence in the lung could not be so readily controlled as with an accessible surgical lesion, as in this case. It is not impossible, he concludes, that the tuberculin treatment may fan an old latent apical process into a flame, and this focal reaction in the lung might terminate fatally. In his case the promptly favorable influence on the breast affection was remarkable, suggesting a local fluctuation in the defensive processes in favor of recent lesions.

87. **Symposium on "606" in Syphilis.**—The second of the 10 questions asked in the question blank sent out by the *Medizinische Klinik* is in regard to by-effects, and 7 of the 9 writers report occasional higher temperature and local pains as the only by-effects observed. But from Klingmüller's clinic at Kiel and by F. Pinkus of Berlin are reported 1 case of gangrene, 3 of local necrosis, 2 of abscesses, 3 of toxic erythema, 1 of detrusor paralysis, 1 of tenesmus and a case in which pre-existing diabetes became aggravated and still persists thus to date.

Münchener medizinische Wochenschrift

September 6, LVII, No. 36, pp. 1865-1920

89 *Experiences with Surgery of Blood-Vessels and Transplantation of Organs. E. Enderlen and W. Borst.
90 *Therapeutic Puncture of the Brain in Chronic Hydrocephalus. R. W. Finkelnburg.
91 Technic for Mixed General Anesthesia. (Ein Verfahren zur Stickoxydulsauerstoffnarkose.) M. Neu.
92 Roentgen-Ray Diagnosis of Miliary Pulmonary Tuberculosis. (Röntgendiagnose der miliaren Lungentuberkulose.) W. Achelis.
93 Action of Ehrlich's "606" on Psoriasis and Lichen. (Wirkung des Ehrlichschen Arsenobenzols auf Psoriasis und Lichen ruber planus.) K. Schwabe.
94 Coagulation Time of Blood in Pregnancy. (Ueber Blutgerinnungszeit in der Schwangerschaft.) P. Mathes.
95 General Amyloid Degeneration in Japan. Y. Tanaka.
96 *Technic for Artificially Induced Pneumothorax. (Zur Technik der Kompressionsbehandlung bei Lungentuberkulose.) J. Holmgren.
97 Industrial Accidents to the Hands. (Ueber Maschinenverletzungen der Hand.) E. Schümann.
98 *Peritonitis from Local Drug Irritation in Gonorrhea in a Male. H. Bodenstein.
99 Study of the Pulse during Physical Labor. (Plethysmographische Untersuchungen bei körperlicher Arbeit.) E. Weber.
100 *Diagnosis of Pulmonary Tuberculosis. (Kritische Beiträge zur Diagnose der Lungentuberkulose.) F. Köhler.

89. **Surgery of the Blood Vessels and Transplantation of Organs.**—The extensive work reported by Enderlin and Borst confirms the importance of biochemical individual conditions. These are sufficient to interfere with the success of homoplastic transplantation of organs. Only those of autoplastic origin promise complete success. He doubts whether it will ever be possible to overcome this difficulty of the biochemical individual peculiarities in transplanting organs.

90. **Therapeutic Puncture of the Brain.**—Finkelnburg reports a case of chronic hydrocephalus in a youth of 16, evidently the result of a trauma of the head 6 years before. The symptoms indicated progressive compression of the brain, some of them suggesting a tumor in the cerebellum, especially the pain in the back of the head, the stumbling gait, deafness, etc.; the pulse was only 56, the pupil reflex was sluggish, the eyes protruding, with extreme choked disc and nystagmus. The brain was punctured near the left motor centers to a depth of 5 cm., and about 20 c.c. of fluid was released under high pressure. The headache and vomiting subsided and the patient was able to walk without support and by the sixth day the choked disc was much less pronounced, while the hearing also had improved. Improvement continued to progress so rapidly that no further operation was attempted and the young man is now, 3 years after the operation, apparently well with a suspicion of nystagmus and slight exaggeration of the knee-jerk as the only traces of his former trouble. The necropsy in another case, the patient dying before puncture of the brain had been heard of, showed the feasibility of operative treatment in these cases. The only explanation of the rapid improvement after release of such a small amount of fluid is that the accumulated fluid by its compression had induced a kind of valve-like closure of the opening between the skull and the spinal canal.

96. **Technic for Artificially Inducing Pneumothorax.**—Holmgren states that it is possible to apply this method of treatment of unilateral pulmonary tuberculosis even in cases in which the adhesions between the sheets of pleura apparently contra-indicate it. This can be accomplished by injecting physiologic salt solution under pressure sufficient to detach the adhesions and spread apart the walls of the pleural sac. Without removing the needle it is then connected with the tank of gas which can then be injected without further difficulty to make the therapeutic pneumothorax.

98. **Peritonitis with Gonorrhea.**—Bodenstein explains the peritonitis in the case reported as due to chemical irritation from the silver nitrate solution injected so high as to reach the seminal vesicles and thence the peritoneum.

100. **Diagnosis of Pulmonary Tuberculosis.**—Köhler is in charge of a large sanatorium for pulmonary disease and his experience has shown that the tendency is to diagnose tuberculosis in many cases in which it does not exist. He warns that nervous-toxic processes, in combination with a special excitability of the heat center, play an important part in the reaction to the tuberculin test. They may induce a positive reaction even in the non-tuberculous. He obtained a positive reaction in 21.7 per cent. of numerous patients given a sup-

posed injection of tuberculin when either nothing was injected or merely sterilized water. The reaction to this sham tuberculin test could not be distinguished from the ordinary positive reaction. Lorenz has reported similar findings; he ascribes them to a neurasthenic or hysterical tendency. Elliesen has also reported recently positive reactions with chlorosis and once, in a case of Werlhof's disease, the intense tuberculin reaction and slight physical anomalies in the lungs indicated tuberculosis but not a trace of it could be detected at necropsy. Neumann and others have obtained a positive reaction in syphilis alone, others in actinomycosis, carcinoma and leprosy, and A. Fränkel obtained an unusually large proportion of positive reactions with patients with various diseases. However, when a positive reaction is obtained with minute doses, up to a maximum of 1 or 2 mg., the presumption is in favor of tuberculosis. In industrial accidents the shock to the whole nervous system may promote a positive reaction in the absence of tuberculosis. In one such case 4 test injections of 0.2 up to 1.5 mg. elicitated an intense positive response each time, but the lung findings were normal and the course of the case confirmed the absence of tuberculosis. In another case the trauma had lacerated the lung and aggravated an existing tuberculosis process, but repeated tuberculin tests up to 8 mg. were negative. A positive response to the tuberculin test merely indicates that the heat-forming apparatus is unusually excitable, and this is peculiarly marked in the tuberculous, but it does not follow that every one with excitability of this apparatus is necessarily tuberculous. He has also observed numerous cases in which the symptoms of the tuberculosis persisted unmodified although there was no apparent response to tuberculin. New foci may develop even in the course of tuberculin treatment and without disturbing the sensitiveness to the tuberculin. Even more important than the physical signs and the tuberculin reaction, is a tendency to loss of weight or increasing anemia. Köhler warns further that not every deviation from normal in the auscultation findings is necessarily of tuberculous origin. The changes with mouth breathing or dropping back of the tongue or as the patient swallows must not be ascribed to tuberculosis. Repeated examination on different days will disclose the inconstancy of the findings from these causes. Accumulation of fat in the corpulent may induce a pseudocrepitation over the apices. Even constant râles may be induced by a chronic streptococcus process as he cites by several examples, necropsy demonstrating the absence of all traces of tuberculosis, even in one case in which there had been repeated hemoptysis. It was explained finally as hemosiderosis from destruction of blood corpuscles from pernicious anemia. Everything in this case had pointed to pulmonary tuberculosis and the necropsy findings were a great surprise as there had been nothing to suggest the necessity for examination of the blood. With a tuberculous process in the lower lobe the patients may keep well nourished; he has had a case of this kind under observation for 6 years. This patient, now 21, could not stand tuberculin treatment as he reacted with high fever to the smallest doses, but his general health is still good, although he has 2 or 3 moderate hemorrhages every year. Köhler emphasizes that the physical findings merely indicate the physical condition of the lung but not the underlying cause of the changes observed, whether old or recent or whether due to the pneumococcus, streptococcus, or tubercle bacillus. The predominantly central tuberculous processes are more frequent, he declares, than is generally recognized. Enlargement of the glands in the neck is an important aid in diagnosis, as also the subjective disturbances, particularly a continuous sense of fatigue. One is tempted to ascribe such merely to a neurasthenic origin when in fact some concrete organic cause is responsible for it.

Therapeutische Monatshefte, Berlin

September, XXIV, No. 9, pp. 461-516

101 *Heart Disease. (Zur Beurteilung von Herzstörungen, und ihre Behandlung.) A. Plehn.

102 *The Lung Suction Mask and Its Therapeutic Application in Pulmonary Disease, Anemia, Asthma, Weak Heart Action and Insomnia. (Die Anwendung der Lungen-Saug-Maske.) E. Kuhn. Commenced in No. 8.

103 Serotherapy of Epidemic Meningitis. (Die Serumtherapie bei Genickstarre.) F. Goppert.

101. **Heart Disturbances.**—Plehn calls attention in particular to the disturbances ascribed to the heart when its outlines are normal in every respect and a dozen knee-bending exercises do not make the patient breathe much faster and, although the pulse may increase by 10 or 20 beats, yet there is no shortness of breath. These findings exclude actual organic disease, and for all forms of heart disease determination of the shape and size of the different parts of the organ is of primal importance; this alone, he declares, permits correct interpretation of the auscultation findings. It must be borne in mind, however, that the compensating dilatation and hypertrophy after an endocarditic process take some time to develop so that during or after acute articular rheumatism a systolic murmur and weak heart action require extreme caution and strict bed rest until normal heart action is restored. The biologic relations between the innervation and the muscles are particularly close in the heart, he continues, and the action of toxins, tobacco and alcohol, of the toxins generated in exophthalmic goiter, and of emotions is the main factor in heart disturbances without enlargement of the organ. The reflex heart neuroses proceed from the gastro-intestinal or genital sphere, either directly or from emotional depression. The connection between the heart and the stomach is closer than is generally recognized, he states. Acute pericarditis, for example, is usually accompanied by violent gastric symptoms and dilatation of the stomach by serious symptoms on the part of the heart. A mild pericarditis is a frequent occurrence and may pass unsuspected unless the physician examines the heart when he will find the dulness extending a little farther than usual and sharply defined while careful percussion will reveal that the heart-liver angle can no longer be detected. With an exclusively nervous heart disturbance, angioneurotic edema of the ankles is common; mechanical disturbances in the peripheral circulation occur comparatively late and only after such have developed in the liver, kidneys and lungs. If there are no signs of this or of organic changes in the heart, moderate edema need not be regarded with pessimism. He treats acute articular rheumatism so perseveringly with the salicylates that endocarditis rarely develops among his patients, and he suggests prompt salicylic medication to be resumed again with every infectious sore throat in persons who at any time have displayed a tendency to endocarditis during acute rheumatism or other infection. Energetic salicylic medication may ward off endocarditis and valvular defects even after pericarditis or myocarditis is already installed. He adds that any one who has ever had acute rheumatism should guard carefully against getting chilled or wet through and against over-exertion. An extra-hygienic life should be followed by persons with a family tendency to arteriosclerosis, apoplexy, obesity, diabetes or gout, and the obese should bring their weight down before the heart has suffered severely. At the same time he warns that too severe restrictions are liable to bring on hypochondria which may react unfavorably on the organic trouble.

102. **Mask to Induce Passive Hyperemia in the Lungs.**—Over four years have now elapsed since Kuhn introduced his "lung suction mask" to induce passive congestion in the lungs by obstructing respiration. He here reviews his own and others' experiences, all confirming the absolute harmlessness of the measure and its efficient action in impeding the inspiration, which is nasal, while expiration proceeds unobstructed both by mouth and nose. As Tileston explained, in THE JOURNAL, April 11, 1908, page 1182:

> The effect of impeded inspiration is to produce negative pressure in the thorax, lasting almost throughout inspiration; the inspiratory muscles are brought into strong contraction, inspiration is prolonged, and the rate of respiration is lowered. The most important effect, however, is the marked aspiration of blood from the right side of the heart into the lungs, due to the prolonged negative pressure. The lungs are, therefore, supplied with an increased amount of blood. Moreover, since expiration is not obstructed, it will be short, and the blood will not have time to escape entirely to the left side of the heart. Thus, after wearing the mask for a while, a considerable degree of congestion is obtained, as has been proved by animal experimentation. This hyperemia differs, of course, from the passive congestion of heart disease, in that there is no obstruction to the pulmonary circulation. The increased amount of blood in the lungs is of the greatest benefit, for it is conceded that it is the relatively poor supply of blood or lymph to the apices which predisposes those parts to tuberculosis.

Not only is the blood aspirated into the lungs but the circulation of the lymph also is materially promoted; other methods of inducing passive hyperemia in vogue check the lymph current. The promoted circulation of lymph and blood induces rapid absorption of effusions while toning up the tissues in every way. Another advantage Kuhn claims for the method is that as the number of inspirations becomes reduced, the lungs are correspondingly rested; the respiration is exclusively costal but the diaphragm is sucked upward by the prolonged negative pressure above and thus the space for the lungs is even less than with ordinary unobstructed breathing, as he shows by a number of illustrations and skiagraphs. The ribs expand mightily, Kuhn states, and this in time has naturally a most beneficial influence on tuberculous lesions in the lungs. At the same time the blood-producing apparatus feels the effect of the lower oxygen tension and responds as it does to the air of high altitudes, the number of red cells in the peripheral circulation becoming permanently increased. He insists that no other measure has yet been discovered that proves so effectual in promoting blood-production as this simple partial obstruction of the respiration. On account of the negative pressure in the chest, the blood pours more abundantly through the heart and the myocardium becomes better nourished and works more effectually, as can be traced by the auscultation and other findings. Zabel has reported great benefit in two cases of severe cardiac defects and others in pericarditis, bronchial asthma, emphysema, pleurisy, bronchitis, anemia and hemoptysis. Cough and dyspnea are allayed, râles, expectoration and bacilli subside in the tuberculous, the complexion and appetite improve, and a gain in weight naturally follows. Except for a slight feeling of oppression in the head for the first day or so, there are no by-effects, Kuhn says, unless the muscles of the chest may ache a little at first from the unwonted exercise. An interesting effect of the impeded respiration is the drowsiness that ensues. Dogs drop promptly to sleep even when suspended in uncomfortable positions, and patients wearing Kuhn's mask lie drowsy most of the time, so that it is proving excellent in combating insomnia. When the dogs with the mask are roused from sleep they are lively at once, which demonstrates that the drowsiness can not be due to carbon-dioxid intoxication; it is evidently the result of the aspiration of blood away from the brain plus the diminished oxygen tension in the respiration center. The respiration is sometimes reduced to 7 or even 6 inspirations a minute in animals under the influence of the mask. The mask is a celluloid cap tied over the nose and mouth, with an adjustable arrangement shutting off more or less of the intake of air to the nose while valves permit its free outward escape. The application of this method of inducing passive hyperemia does not conflict with any other measures that may be applied, but for permanent benefit it is evident that it must be used for many months to modify the conditions in the chest permanently. The only contra-indication, he says, is a very weak heart, and even with this the mask is useful, but it should be applied only for brief periods at a time. In conclusion we quote again from Tileston who states that he found an extraordinarily low percentage of pulmonary tuberculosis in 128 cases of mitral stenosis and in no case was there any evidence of active tuberculosis. This relative immunity is due, he thinks, to the passive hyperemia of the lungs consequent on the mitral lesion.

Wiener klinische Wochenschrift, Vienna

September 8, XXIII, No. 36, pp. 1279-1306

104 Ehrlich's "606" and Enesol in Treatment of Malaria. (Behandlung der Malariainfektion mit Enesol "Clin" und Ehrlichs Dioxydiaminoarsenobenzol.) R. Fleckseder.
105 Case of Paratyphoid A Infection. B. Purjesz.
106 *Sensitization to Light as Factor in Pellagra. W. Hausmann.
107 *Experiences with Operations on the Neck. (Die Krankheiten des Halses.) K. Ewald. Commenced in No. 35.

106. **Etiology of Pellagra.**—Hausmann has been conducting extensive research on the sensitizing action of hematoporphyrin, a product of the decomposition of hemoglobin, seen in the urine after destruction of red-blood corpuscles. The phenomena observed seem to prove that it has a sensitizing action so that exposure to the light afterward induces various pathologic changes. He is convinced that this sensitization plays an important part in the production of pellagra, and quotes certain other writers whose recent research has led to the same conclusions.

107. **Operations on the Neck.**—Ewald reviews the experiences in this line at the Sophia Hospital at Vienna since 1902. The list includes 96 operations on the thyroid, for exophthalmic goiter in 7 and carcinoma in 3. Only 23 of these patients were males, pregnancy being probably responsible for enlargement of the goiter in many instances. In some cases the enlargement occurred suddenly, threatening suffocation, and being probably the result of hemorrhages in the gland. It seems evident that the thyroid may become enlarged under nervous influences alone. In 65 cases he operated under local anesthesia, but this has so many disadvantages that now he always gives a sedative beforehand. There was some fever during healing in all but 4 cases, but no tetany in any instance and severe postoperative pneumonia appeared in only 2 cases; the sputum was hemorrhagic in these cases, suggesting an embolic focus. Three of the patients succumbed soon after the operation on the thyroid; one was a young man, a semi-imbecile, with persisting thymus and enlargement of the lymph follicles, especially at the base of the tongue. This hypoplasia of the organism seems to reduce the resisting powers. The general anesthesia was not responsible for the fatality in this case as was shown by the second fatality in which the operation had been done under cocain local anesthesia. This patient was a woman of 62, with goiter for 15 years, rapidly increasing in size towards the last, with a suspicion of malignancy. She seemed to be doing well during the night after the operation and the next morning breathing was superficial but not labored and there was no trace of dyspnea. An hour later she died suddenly without stridor, and necropsy disclosed unsuspected edema of the glottis. Only laryngoscopy would have revealed the trouble and nothing was observed to suggest the necessity for this. In the third case, a man of 50 required both cocain and chloroform and roused from the anesthesia with left hemiplegia; he soon became unconscious and died the third day; necropsy revealed 2 foci of acute leptomeningitis but nothing to connect it or the fatality with the operation. Ewald discusses the ultimate cosmetic outcome of the various operations on the neck, 72 of the patients being examined several years later. The goiter recurred in 20 cases, and in 7 a second operation was necessary. The ultimate outcome in exophthalmic goiter was disappointing in all but one case. In 10 other cases the operation was required for acute inflammation in the thyroid, without preceding goiter in 5 cases. In the 6 cases of torticollis good results were obtained although no attempt at systematic after-treatment was made, the patients being merely instructed to exercise the neck muscles after the contracting fibers had been severed. Only a few patients with enlarged tuberculous glands were operated on, as he does not approve of opening up a lymphoma unless it has persisted for years unmodified, isolated and never softening. Under other conditions an operation is liable to be followed by recurrence, while the opening up of the lesion exposes it to secondary infection. So long as the glands are growing in size, general hygienic measures alone are applied, the patients tranquilized, and when the glands enter a quiescent stage, they are generally so small that their removal is no longer desired. If the gland softens and the inflammation compels interference, he curettes out the cheesy masses, avoiding sound tissue, believing that as the disease is not local but general, it is impossible to eradicate it by removal of even all the infected glands.

Zentralblatt für Chirurgie, Leipsic

September 10, XXXVII, No. 37, pp. 1217-1248

108 *Subcutaneous and Intravenous Nourishing Infusion of Sugar. (Ernährung mit Traubenzucker nach Kausch.) J. Berendes.

108. **Alimentary Infusion of Sugar Solution.**—Berendes reports the experiences in 40 cases in which the patients were nourished by subcutaneous or intravenous infusion of a 5 or 7.5 per cent. solution of grape sugar in 0.9 per cent. salt solution. This represents from 200 to 300 calories to the

liter. The infusion causes no more pain or inconveniences than saline infusion, and seemed to be free from any by-effects. There was no glycosuria unless the infusion was repeated for several days in succession and then it was slight. The temperature was not affected except in 2 cases in which there was a chill and the temperature rose to 39.5 and 40 C. after the intravenous infusion of 1 liter of an 8 per cent. solution of grape sugar; in both these cases a little adrenalin had been added to the fluid. The sugar thus introduced is evidently oxidized in the body, and it is thus possible to supply a considerable amount of nourishment in this way.

Zentralblatt für Gynäkologie, Leipsic

September 10, XXXIV, No. 37, pp. 1209-1232

109 Cesarean Section in the Flank. (Zur Kritik und Anatomie eines nach Solms operierten Falles von Flankenkaiserschnitt.) W. Liepmann.
110 Drainage of the Abdominal Cavity. (Zur Technik der Drainage der Bauchhöhle.) J. Fabricius.

Gazzetta degli Ospedali e delle Cliniche, Milan

September 1, XXXI, No. 105, pp. 1105-1112

111 Advantages of Carbon Dioxid Snow for Local Anesthesia. (La neve carbonica in sostituzione del cloruro di etile nell'anestesia locale.) G. Malan.

September 4, No. 106, pp. 1113-1128

112 *Congestion and Hemorrhages in the Viscera in Influenza. (Contributo alla conoscenza delle congestioni ed emorragie viscerali influenzali.) G. Ghedini.

112. **Congestion and Visceral Hemorrhages in Influenza.**—Ghedini gives a long list of records of various forms of congestion and visceral hemorrhages observed by numerous authors, all due to influenza, and then reports a case in which the influenza bacillus was cultivated from the blood and was evidently responsible for the swelling, congestion and hemorrhagic tendency in the lungs, stomach, intestines, liver, spleen and kidneys. The patient was a young man and the severe syndrome ran its course to apparently complete recovery in less than a month.

Riforma Medica, Naples

August 28, XXV, No. 35, pp. 953-980

113 Recurrence of Kala-Azar in the Spring. (Intorno alla recorrenza primaverile dei casi di Kala-azar.) U. Gabbi.
114 *Experiences with Nephrectomy. (Casistica della nefrectomia.) P. Federici.
115 Acute Yellow Atrophy in Secondary Syphilis. (Ittero grave con esito in atrofia giallo-acuta del fegato nella sifilide secondaria.) G. Antonelli.
116 *Amputation of the Breast by Tansini's Technic. (Una nuova indicazione del processo Tansini per l'amputazione della mammella.) O. Cignozzi.

September 5, No. 36, pp. 981-1008

117 Study of the Physiology and Pathology of the Stomach. (Gastropatie dinamiche ed organiche.) G. Rummo.
118 Hepato-cholangio-enterostomy. D. Taddei.
119 Anaerobic Germs in Suppurative Processes. V. Gaudiani.

114. **Nephrectomy.**—Federici states that Tansini has lost only one out of 51 patients on whom he has done nephrectomy, and this fatality was in 1895. In his last 4 cases the kidney was removed on account of tuberculosis, concrements or deformity. The results were good in each case. He does not lay much stress on the findings of the functional tests, although he never fails to apply them. One factor in his success is his method of clamping the hilus after exposing the kidney by an incision parallel to the ribs, resecting if necessary the twelfth and eleventh ribs. Clamping the hilus permits the rapid mobilization of the rest of the organ, so that the whole operation is complete in a few minutes as no time is wasted in ligating the vessels separately.

116. **Amputation of the Breast for Tuberculosis.**—Cignozzi reports a case in which he removed the breast and axillary glands for an extensive tuberculous process, and covered the defect left by a large flap drawn around from the back, according to Tansini's method. The results were unusually good, the patient being able to use the arm and shoulder even after 2 weeks, and in 45 days, under iodid treatment, she was dismissed apparently cured.

Hospitalstidende, Copenhagen

August 3, LIII, No. 31, pp. 905-928

120 *Long Survival of Cholera Germs in Sea Water. (Undersøgelser over Koleravibrionernes Levedygtighed i Havvand.) K. A. Jacobsen.
121 Serotherapy of Tetanus. C. Hansted.

August 10, No. 32, pp. 929-952

122 Localization of Tuberculous Processes in the Lungs. (Hvilken Lunge angribes fortrinsvis af Tuberkulose?) N. J. Strandgaard.

August 17, No. 33, pp. 953-984

123 The Wassermann Reaction in Leprosy. (Undersøgelser over Komplementbinding med Serum af Spedalske.) O. Thomsen and S. Bjarnhjedinsson.

120. **Viability of Cholera Germs in Salt Water.**—Jacobsen writes from the Serum Institute at Copenhagen to relate the results of tests to determine how long cholera germs will survive in salt water in ship ballast tanks and also in tanks after they have been thoroughly rinsed out with sea water and filled anew with non-contaminated water. The vibriones were found alive in some of the tests up to 47 days, showing the danger from this source if a ship, for instance, fills its tanks with harbor water at St. Petersburg and reaches its destination in less than this number of days. The tests further showed that flushing the tanks with fresh sea water is not sufficient to free them from cholera germs lurking in the slime and crevices. The last epidemic of cholera in Holland and Belgium, he states, was traced to infected water taken from the river at St. Petersburg and brought in the ballast tanks to the other countries. The tests made during the summer showed a comparatively brief survival of the germs, from 7 to 17 days, the presence of other microbes, more prevalent during the summer, probably checking the growth of the vibriones.

Ugeskrift for Læger, Copenhagen

September 8, LXXII, No. 36, pp. 1069-1098

124 Diagnosis of Enlargement of Bronchial Glands. (Bronkialglandelsvulst.) H. J. Bing.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

MOTHERHOOD. A Manual on the Management of Pregnancy, the Preparation for and Conduct of Labor and the Principles and Methods of Infant Feeding up to the Third Year of the Child's Life: Prepared especially for Mothers, Nurses and Students of Medicine. By Hudson D. Bishop, M.D., Visiting Obstetrician to the Maternity Hospital, Cleveland. Cloth. Price, $1.50 net. Pp. 244. Cleveland: Rose Publishing Co., 1910.

GENESIS. A Manual for the Instruction of Children in Matters Sexual, for the Use of Parents, Teachers, Physicians and Ministers. By B. S. Talmey, M.D., Former Pathologist to the Mothers' and Babies' Hospital and Gynecologist to the Yorkville Hospital, New York. Cloth. Price, $1.50. Pp. 194. New York: The Practitioners' Publishing Co. (1910).

THE PRACTICE OF MEDICINE. A Guide to the Nature, Discrimination and Management of Disease. By A. O. J. Kelly, M.D., Assistant Professor of Medicine in the University of Pennsylvania and Assistant Physician to the University Hospital, Philadelphia. Cloth. Price, $4.75 net. Pp. 945, with illustrations. Philadelphia: Lea & Febiger, 1910.

TRANSACTIONS OF THE THIRTY-SECOND ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION. Held at Washington, D. C., May 3, 4 and 5, 1910. Cloth. Pp. 277, with illustrations. New York: American Laryngological Association [James E. Newcomb, Secretary, 118 West Sixty-ninth Street], 1910.

A TREATISE ON DISEASES OF THE EYE. By John E. Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University). Cloth. Price, $6 net. Pp. 944, with 553 illustrations. Philadelphia: Lea and Febiger, 1910.

FIFTH ANNUAL REPORT OF THE ASSOCIATED COMMITTEES OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE PREVENTION AND CONTROL OF TUBERCULOSIS. John B. Hawes, Corresponding Secretary, 3 Joy Street, Boston. Paper. Pp. 46. September, 1910.

BIOLOGY, GENERAL AND MEDICAL. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. Price, $1.75 net. Pp. 440, with 160 illustrations. Philadelphia: W. B. Saunders Co., 1910.

PROCEEDINGS OF THE NATIONAL CONFERENCE OF CHARITIES AND CORRECTION. At the Thirty-sixth Annual Session held in the City of Buffalo, N. Y., June 9 to 16, 1909. Edited by Alexander Johnson, Fort Wayne, Ind. Cloth. Pp. 606.

A FLESHLESS DIET. Vegetarianism as a Rational Dietary. By J. L. Buttner, M.D. Cloth. Price, $1.35 net. Pp. 287. New York: Frederick A. Stokes Co. (1910).

ANNUAL REPORT OF THE CHIEF OF BUREAU OF MANUFACTURES TO THE SECRETARY OF COMMERCE AND LABOR FOR THE FISCAL YEAR ENDED JUNE 30, 1910. Paper. Pp. 23. Washington: Government Printing Office, 1910.

THE PRACTICE OF SURGERY. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital. Cloth. Price, $7 net. Pp. 1015, with 682 illustrations. Philadelphia: W. B. Saunders Co., 1910.